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Fancied Faults of Italian Bees.

Translated for the American Bee Journal.

At the German Bee-keepers' Convention at Nuremberg, in September last, Mr. Kaden, an old apiarian, a time-honored correspondent of the "*Bienenzeitung*," and a warm admirer of the Italian bees, stated that "it must be conceded that these bees have some undesirable qualities. First, among these, is an aptitude to change their queens. He had known a colony to make such changes three times in the course of a single summer, without swarming. Secondly, they manifested a strong propensity to build drone combs. Not only will first swarms build such combs, but even second swarms, and artificial colonies with young queens, will do so. And, thirdly, Italian colonies are usually less populous in the spring, than those of black bees." When asked, if this be so, why he still cultivated the Italian bees, he said, first because of their beauty and gentleness—qualities always overpoweringly attractive, for above all things he dreads the want of gentleness in bees, as well as ladies! Secondly, for the means afforded by them, of producing hybrid stock, which, for productiveness, he preferred to the pure breeds, whether honey or wax was the object.

In reply, Dzierzon said, "Undoubtedly there is nothing perfect beneath the sun, and the Italian bee too may have some qualities not exactly desirable. Nevertheless, I regard it as the best of the known varieties, and apprehend the last speaker must have looked through glasses somewhat discolored, to have seen so many serious objections. First, he complains of frequent change of queens. This may be so under peculiar circumstances, and from various causes, to one of which I will here advert. When a queen is introduced into a colony, we cannot always be sure of what takes place. She may receive some injury not immediately fatal, but sooner or later resulting in her death, and thus necessarily producing a change. But I can give the assurance that, in the course of last summer, in all my colonies not a single queen was superseded, and not one perished; though in former years this has sometimes happened. It may be true also that Italian queens do not attain to the age which black queens ordinarily reach; but this springs from their su-

perior fertility. They lay the same number of eggs as others, but in a much shorter period; which I regard as a decided advantage.

It is also objected that the Italian bees do not suit a district with early spring pasturage, the colonies being then comparatively weak. An advantage rather, I conceive. The Italians cease brooding earlier in the fall, and apply their extraordinary industry to the accumulation of stores while pasturage is diminishing; and thus, though less populous, are well supplied for the winter. Whereas the black bees, occupied with nursing their brood, gather comparatively little, and, with many bees, may be in want before spring. The Italians, in their zeal for honey-gathering, may indeed venture out in unpropitious weather in the fall, and many may thus be lost; but it is this trait precisely that enables them to produce such extraordinary results when pasturage abounds and the weather is favorable.

Again, the Italian bees are charged with a propensity to build drone combs. Now, I have set up for trial pure colonies of both kinds, and the issue was just the reverse of this. I have found no such propensity among the Italians, and have had to insert drone combs in their hives, when a supply of drones became desirable; because the bees in those colonies did not, of their own accord, build such combs.

I am thus constrained to differ from the last speaker, in these particulars, and must continue to regard the Italian bee as superior to any other of the known varieties, and the best of the cultivated breed."

Mr. Fütterer next remarked, "It is urged against the Italian bees that they change their queens frequently. Judging from my own experience, I must doubt this. I have cultivated these bees about twelve years, and have had no reason to complain of such changes. They may have occurred to others, and I will endeavor to show, briefly how they may be accounted for. An enthusiastic bee-keeper buys a fine large yellow queen—a prime article—and introduces her in one of his colonies. Every few days he is visited by some brother bee-keeper, to whom of course the splendid stranger must be shown. The hive is opened, the workers more or less irritated, and the beautiful queen exhibited and then returned to her domi-

cile. The bees are aroused and in angry commotion on each occasion; but the hive is finally closed, and the owner walks off satisfied and *gratified*, ready to repeat the exhibition day after day, to please admiring friends. Ultimately however, amid all this disregarded humming and bustle, her majesty is attacked, enclosed by the workers, and killed! Now who is at fault? Obviously the bee-keeper himself! Italian queens are not more liable to be attacked and killed, than others.

As regards the objection that the Italians are inordinately prone to build drone combs, I agree with Dzierzon that it is unfounded, for my experience coincides with his. If an Italian colony is properly managed, the workers will not build more drone comb, than black bees will in like circumstances. By improper management, doubtless, undesirable qualities may be developed in those bees, as in others; but what some may regard as an objection, others will perhaps consider an advantage. Thus, for instance, with me it is desirable that my bees should secure large stores of honey in the fall, and many Italian workers may be lost in their late excursions. The result is that I have less populous hives in the fall than my neighbor, who has only black bees, in populous hives, with much less honey. I have not so many bees to carry through the winter; and when the swarming season arrives, my colonies are quite as strong as his, the superior fertility of the Italian queens having speedily replenished the hives."

[For the American Bee Journal.]

The Italian Bees Again.

I have received three communications or inquiries, and all three of about this purport—"Mr. Gallup, I wish your candid opinion of the Italian bees. I have tried them, and do not find them to come up to the recommendation. In fact they have not done near as well as my black bees," &c.

Now these correspondents are no doubt perfectly honest in their conclusions; but they have been deceived. Two seasons ago I procured three queens from a certain party, who advertised cheap queens, and my neighbor, Mr. Wright, obtained three from the same party. My three queens would not breed as fast as one ordinary prolific queen; in fact they could not breed fast enough to keep up the strength of the stocks, leaving increase or profit out of view. Neither could I or did I succeed in raising prolific queens from them. Mr. Wright's turned out worse than mine. To use his own language, they did not pay the transportation; they ruined the stocks they were introduced to. A Mr. Johnson and Mr. Drake, of Brownsville, in this county, procured queens from a certain party in M—. They were warranted pure, but, allowing me to be a judge of their purity (and I saw them), they were a recross from a cross; and it was hard to tell whether they were any better than the blacks. But of one thing we were sure, they were as cross as vengeance! Then there was another party at Dacotah in this State, who scattered pure Italians broad-cast; and I saw several of those stocks in different parts of the State. The owners of them informed me that they could not discover that

they were any better than black bees. Now, for a description. They were a mere shade lighter than common blacks, and a few in each swarm showed a slight stripe. The owners purchased them for pure Italians, and not knowing to the contrary, judged from them that the Italians are a humbug.

In the first place, a queen breeder that intends to keep up his reputation should breed from none but stock of undoubted purity. He should breed from prolific queens, and avoid breeding in and in as much as possible. As Mr. Benedict says, we can breed stripes on to our bees (and I do not in the least doubt this), so we can by careful breeding raise our stock up to produce prolific queens.

To the person who is unacquainted with the Italians, I would say, procure your first queen from some old experienced breeder, one who has already established a reputation; for *it is in the end cheaper to pay even twenty dollars for a queen, and be sure that she is a good one in every respect, than to obtain a poor one as a present.*

If I had known nothing about Italian bees, and formed an opinion of them from the queens obtained by Mr. Wright and myself, I should in all probability have condemned them.

You will see in the BEE JOURNAL, an account of my experience with the Italians the past season, as also with the blacks, and the cross breeds; and the Italians have demonstrated their superiority beyond a possible chance of mistake.

E. GALLUP.

Orchard, Iowa.

[For the American Bee Journal.]

Italians versus Black Bees.

It is ten years since the Italian bee was first imported. The question was then asked—"Is it any better than the black bee, or is it a humbug? a mere scheme for money making!" And strange to say, notwithstanding that variety is so widely disseminated, the same question is still asked by many anxious inquirers. Skillful apianians, men who have given both kinds a chance to be judged of by their fruits, have I believe to a man given the preference to the Italians. But the more witnesses the better, and hence I wish to add my experience.

I am frequently in receipt of letters asking how I like the Italians, and whether I find them superior to black bees; and without doubt other apianians are besieged with similar inquiries. Courtesy requires that such letters be answered, no matter what the hurry of business; and an ordinary letter can cover but a small amount of the ground necessary to be gone over to tell why our preference is so much for the Italians. Allow me, Mr. Editor, to answer, so far as I am concerned, many of these letters at once, through the medium of your excellent Journal, that in future it will only be necessary to say to such inquirers—"See AMERICAN BEE JOURNAL for April, 1870."

Experience alone can demonstrate the truthfulness of theory, and I am free to give mine if any one will be benefited or instructed thereby. Concluding that twenty (20) years' experience

with bees, and reading everything I could obtain on the subject, had qualified me to manage them, I purchased two Italian queens and began the work of Italianizing in the summer of 1866. In the spring of 1867, I had thirteen colonies of Italian and forty-seven of black bees. Now for the result. From one of my Italian colonies, I obtained three swarms (that wintered) and eighty pounds of honey; about fifty pounds of this was stored by the first young swarm, and the balance (thirty pounds) by the stock, after casting the three swarms. Other of the Italian stocks did nearly as well. The poorest one gave me two swarms and twenty pounds surplus. The best stock among my forty-seven black colonies, gave me one swarm and thirty pounds of surplus; and I had about a dozen stocks that gave me no swarms nor an ounce of honey. One second swarm of Italians filled its hive and gave me twenty pounds of surplus, while not even a first swarm among the blacks stored a pound of surplus.

I closed the season with one hundred and twenty colonies, all Italians, which I wintered without loss. The following May and the first half of June proved wet and cold, and very little honey was secreted in the few flowers that did bloom. The store of honey became exhausted, and many of my colonies were on the verge of starvation; and here a point of excellence in the Italians presented itself, which I did not expect. For a number of years I had been more annoyed by my bees deserting their hives in the spring, when their stores of honey became low, than from all other causes combined. The depredations of the wax moth and loss of queens sunk into insignificance in comparison with this voluntary desertion of the hives, by colonies, and this sometimes while several pounds of honey yet remained. Apparently nothing but the fear of want caused them to sally out and try to obtain entrance in other colonies, which, if they succeeded in doing, they were sure to be slaughtered to the last bee. But when I succeeded in preventing entrance to other colonies, and returned them to their own hive, the only sure way of making them stay, was to deprive them of their queen for a week or two at least, in which situation they would construct royal cells, and the mania for deserting their combs would pass away. Then liberal feeding, if the flowers had not begun to yield honey, would set matters right; and by fall such stocks would be in good condition, but have yielded no profit. But I have observed that the Italians "stick to the castle;" and I have never had any Italian colony offer to desert its home, though I have tested them severely on this point. I cannot account for this difference, unless it be their superior attachment to their brood, or a consciousness that if the flowers opened while life remains, they are abundantly able to supply all their wants. I do not know whether the experience of others is similar to mine, in this particular, or not, as I do not remember to have seen a reference to it from any of your numerous and able correspondents.

But Mr. A—, a man of limited experience with bees, and with very limited force in any

enterprise, "has tried the Italians and does not like them," thinks they "aint quite so good as blacks." Now such men do not take the BEE JOURNAL, and it would be useless for me to give my opinion of them as mighty poor bee-men, for they would not "see themselves as others see them." But there are other men who believe that what is worth doing at all is worth doing well, and if the honey bee will pay for cultivating, that is the best kind which pays the best—the ultimate object being to obtain honey of the best quality for the table or for market.

The difference of conclusion arrived at by different men, to my mind, springs from the different degrees of fertility of the first queens obtained. Every apiarian is aware of the fact that there is a great difference in the fertility of the queens in his own apiary. Some are marvels of productiveness, while others deserve no better fate than to have their heads pinched off at sight. The queen is the mainspring of the colony, and the more productive she is, the more energy will the workers display in bringing in pollen and honey. The two queens I first purchased were introduced to colonies of black bees. One proved to be wonderfully productive, while the other was worthless and was superseded before fall. Had I possessed only the queen last referred to, I should have formed a very poor opinion of the Italians. And just here a remark of the lamented Varro comes to mind, viz., that "if queen breeders would sell fewer queens, and at a higher price, and know themselves the quality of the stock, it would be much better for the purchaser."

Lest this article become too long to be acceptable, I will close by saying, from the experience of the last four years, I prefer the Italians to black bees, and consider them superior in every respect.

W. J. DAVIS.

Youngsville, Pa., March 3, 1870.

[For the American Bee Journal.]

Chloroforming Bees.

It appears from an extract from the *Southern Cultivator*, which appeared in the last January number of the BEE JOURNAL, that Dr. A. Love killed his bees by quieting them with chloroform. What else could be expected from a doctor? Killing belongs to the trade! They frequently give an overdose. Chloroform may be safely used in proper quantity for quieting bees. As an agent for introducing queens I have found it very effectual. The quantity used should never exceed one-fourth of an ounce, and even that quantity may be found too large if the hive is tight and all the fumes are retained in the hive among the bees. It is not best to give so much as to make the bees fall down out of the combs, because if so, many of them would get a doctor's dose. Not dead drunk, but simply drunk, is all they require.

J. H. THOMAS.

Brooklin, Ontario.

Second swarms usually issue nine days after the first, although they have been known to issue as early as third and as late as the seventeenth, but such cases are very rare.—Langstroth.

[For the American Bee Journal.]

Yellow Bands.

On page 141, are two columns of questions, queries, and answers. Lina, Baroness of Berlepsch, says—"The Italian bee bred in Italy has generally but two yellow bands, and, including the narrow strip next the thorax, three. But Dzierzon has raised a much more beautiful race. The workers of his full-blooded bees have three yellow bands, exclusive of the narrow strip."

In the next column, Querist asks—"Are three yellow bands a proper test?" Mr. Nesbit answers—"That is considered a test by the best apiarians both in America and in Europe." This answer is hardly satisfactory, because it involves still another test. We want to know *what* constitutes the *best*? I have asked this question before. We want this as a test for them, that we may know whom to follow.

Dzierzon's "full-blooded bees have three bands exclusive of the narrow strip." But in Italy, where these very bees were obtained, they have but two; and now, after he has succeeded in breeding, through several generations, a lighter color than the original, should he advertise that four bands were the *only* test of purity, and considered so "by the best apiarians," and the pure are in his hands and you must come to him for them, it would be as consistent as very many of our folks are. When we find who "the best apiarians" are, we will inquire of them if it is possible for any of those of our imported queens that come from a district where no black bees are known, are pure, although they show less than four bands? or if those that Mr. Grimm imported and described are so?

It is possible that very light bees may be pure; but I dislike the idea of denying parentage because of a change. Possibly this very change in color—call it improvement—may prove a degeneracy in vigor. We can trace great changes in the vegetable kingdom. In the rose, dahlia, and hundreds of other flowers, the five petals, by means of the stamens, are multiplied to hundreds, increasing the beauty, but at the expense of the seeds. I hope that as we increase the beauty of our queens by pale golden tints, we shall not, in the same ratio, decrease their fertility.

Gravenhorst, who has sent very many of our queens to us, says, "We have paid much less regard to color than to other qualities, such as activity, industry, prolificness, disposition, &c."

Although purity is so easily proved by the "best apiarists," can it be as easily shown that these very pure ones of *fourth* proof show any better results, store more honey, increase faster, behave better, defend themselves with more vigor, or on the whole possess more desirable qualities? Let us look to this.

M. QUINBY.

St. Johnsville, N. Y.

It is a wise arrangement that the second swarm does not ordinarily issue until all the eggs left by the first queen are hatched, and the young mostly sealed over, so as to require no further feeding. Its departure earlier than this, would leave too few laborers to attend to the wants of the young bees.

—Langstroth.

[For the American Bee Journal.]

The Indian Bees.

MR. EDITOR:—The article in the JOURNAL for November, on the "Ferocity of the Indian Bees," is not calculated to inspire one with a longing desire to obtain them. One statement, however, gives me some hope that they may be domesticated, viz.: "the nests in the church steeple." This is a favorite resort with our black bees, and probably with the Italian, and leads me to hope that they have other habits in common. It may be that the *apis dorsata* in India is more dangerous than those in the islands of the Malay archipelago. The following, taken from the "Malay Archipelago," by Alfred Russell Wallace, will doubtless interest many of your subscribers:

Of the products and exports of the island of Timor, he states: "Besides ponies, almost the only exports of Timor are sandal wood and beeswax. The sandal wood (*santalum alb*) is the produce of a small tree, which grows sparingly in the mountains of Timor and many of the other islands of the far East. * * * The beeswax is a still more important and valuable product, formed by the wild bees, (*Apis dorsata*), which build huge honey combs, suspended in the open air from the under side of the lofty branches of the highest trees. These are of a semicircular form, and often three or four feet in diameter."

"I once saw the natives take a bees' nest, and a very interesting sight it was. In the valley where I used to collect insects, I one day saw three or four Timorese men and boys under a high tree, and looking up, saw on a very lofty horizontal branch three large bees' combs. The tree was straight and smooth-barked, without a branch till at seventy or eighty feet from the ground it gave out the limb which the bees had chosen for their home. As the men were evidently looking after the bees, I waited to watch their operations. One of them first produced a long piece of wood, apparently the stem of a small tree or creeper, which he had brought with him, and began splitting it through in several directions, which showed that it was tough and stringy. He then wrapped it in palm leaves, which were secured by twisting a slender creeper round them. He then fastened his cloth tightly round his loins; and, producing another cloth, wrapped it round his head, neck, and body, and tied it firmly round his neck, leaving his face, arms, and legs completely bare. Slung from his girdle he carried a long thin coil of cord; and while he had been making these preparations, one of his companions had cut a strong creeper or bush-rope eight or ten yards long, to one end of which the wood-torch was fastened and lighted at the bottom, emitting a steady stream of smoke. Just above the torch a chopping-knife was fastened by a short cord."

"The bee-hunter now took hold of the bush-rope just above the torch, and passed the other end round the trunk of the tree, holding one end in each hand. Jerking it up the tree a little above his head, he set his foot against the trunk, and leaning back, began walking up it. It was wonderful to see the skill with which he took advantage of the slightest irregularities of the bark

or obliquity of the stem to aid his ascent, jerking the stiff creeper a few feet higher when he found he had a firm hold for his bare feet. It almost made me giddy to look at him as he rapidly got up—thirty—forty—fifty feet above the ground; and I kept wondering how he could possibly mount the next few feet of straight, smooth trunk. Still, however, he kept on, with as much coolness and apparent certainty as if he were going up a ladder, till he got within ten or fifteen feet of the bees. Then he stopped a moment, and took care to swing the torch (which hung just at his feet) a little towards those dangerous insects, so as to send up the stream of smoke between him and them. Still going on, in a minute more he brought himself under the limb; and, in a manner quite unintelligible to me, seeing that both hands were occupied in supporting himself by the creeper, managed to get upon it.

"By this time the bees began to be alarmed, and formed a dense buzzing swarm just over him; but he brought the torch up closer to him, and coolly brushed away those that settled on his arms or legs. Then stretching himself along the limb, he crept towards the nearest comb and swung the torch just under it. The moment the smoke touched it, its color changed in a most curious manner from black to white, the myriads of bees that had covered it flying off and forming a dense cloud above and around. The man lay at full length along the limb, and brushed off the remaining bees with his hand; and then, drawing his knife, cut off the comb at one slice close to the tree, and attaching the thin cord to it, let it down to his companions below. He was all this time enveloped in a crowd of angry bees, and how he bore their stings so coolly and went on with his work at that giddy height so deliberately was more than I could understand. The bees were not evidently stupefied by the smoke or driven away far by it, and it was impossible that the small stream from the torch could protect his whole body when at work. There were three other combs on the same tree, and all were successfully taken, and furnished the whole party with a luscious feast of honey and young bees, as well as a valuable lot of wax.

"After two of the combs had been let down, the bees became rather more numerous below, flying about wildly and stinging viciously. Several got about me, and I was soon stung, and had to run away, beating them off with my net and capturing them for specimens. Several of them followed me for at least half a mile, getting into my hair and persecuting me most pertinaciously, so that I was more astonished than ever at the immunity of the natives. I am inclined to think that slow and deliberate motion, and no attempt to escape, are perhaps the best safeguards. A bee settling on a passive native probably behaves as it would on a tree or other inanimate substance, which it does not attempt to sting. Still they must often suffer, but they are used to the pain and learn to bear it impassively, as without doing so no man could be a bee-hunter."

Beeswax is given as one of the chief exports of several of the islands of the Malay archipelago, and I believe it is all produced by the *apis dorsata*.

His Excellency Joseph William Torrey, President of the American Trading Company of Borneo, says he never was in a land that so abounded in bees.

Both the black and the Italian bee have been introduced in Australia. I think the *apis dorsata* does not exist there. I have corresponded with several persons, hoping to get specimens and information; but have not as yet met with much success. Now that the journey is shortened by the opening of the Suez canal, and our relations with the East rendered more intimate, we may soon hope to obtain the *apis fasciata* and the *apis dorsata* direct. Had we a few practical apiarists at different points, no desire need go long unfulfilled; but owing to the absence of the right man in the right place, it is now more difficult to import a bee than an elephant. We look to our Bee Journals, now published in several languages, to spread the much-needed information on the art of packing and transporting bees for long voyages, that our studies and experiments may be extended to every bee that the varieties of climate of our vast country can sustain.

EHRICK PARMLY.

New York.

[For the American Bee Journal.]

From my Bottle of All Sorts.

A certain doctor kept a bottle into which he put all the "odds and ends of all the various compounds prepared for different diseases." This he called his "bottle of all sorts," and when called to attend a patient whose case he did not fully understand, he would order a dose from this bottle, which, he said, was "sure to hit the case every time." Not knowing what would most interest my brother bee-keepers, I have concluded, like the doctor, to give them a dose from my bottle of all sorts, hoping I may "hit" somebody's case.

THE TRIANGULAR COMB GUIDE.

It is to be regretted that there are many men among American bee-keepers who will stoop to so base and dastardly an act as to collect from timid bee-keepers money for the use of the "triangular comb guide," when it appears they have no right to such patent or claim. Two or three years ago, when I was at the Michigan State Fair, exhibiting my hive, K. P. Kidder suddenly appeared and commenced to hold forth close beside me. At that time I was not personally acquainted with him, but had frequently heard of the celebrated H. B. Man—honey bee man, as he at one time styled himself. A gentleman standing by informed me that the person blowing his trumpet so fearfully was no other than K. P. Kidder, and said he, "Kidder claims that you have no right to use the triangular comb guides." I replied, I will see to that. Shortly after, Mr. Kidder came to me and told me the same. After a few words had passed between us, I told Mr. Kidder, if he had four or five thousand dollars to spend in testing the thing, he had better pitch in at once, for I was prepared to try it on. Such a bold front was more than he had bargained for, and in a

very short time after, he was holding forth in another part of the ground, as tame as a kitten.

I understand that in St. Lawrence county, in the State of New York, ten dollars has been demanded of those using the triangular guide, and prosecution threatened if they refused to pay it. Some paid; others refused; but the threat has not been carried out. They are now operating in Michigan, and I am informed many timid bee-keepers are paying their ten dollars; and now this sham suit, an account of which appears in the Journal, will, as the Editor very correctly remarks, tend to frighten timid or ignorant parties into paying for the use of the "guide." I believe it to be the duty of every honest bee-keeper, to expose this nefarious system of obtaining money.

HONEY EXTRACTOR.

I would not have one of the many that have been described in the BEE JOURNAL. Why? Because I am just so vain as to think that I have a better. "And you want to advertise it," says one. No, I do not; but will tell you how it is made. It would not pay you to buy of me under the present tariff; besides, you may not like it as well as your own. It is made of zinc. Tin will eventually rust; zinc will not, and is in no way affected by the honey. For my frames, it requires to be about twenty-two inches deep and twenty inches in diameter. There is a rim around the bottom, to keep the bottom up from the floor. The bottom is strengthened by cutting a board, six inches wide and just long enough to crowd into the rim, and is fastened there. It holds the bottom of the tub from sinking in the middle. Now for the advantage over all others. I make it with a tight cover or top, which keeps out all flies, bees, hornets, or any other sweet-toothed insect, and allows you to use it in your apiary or anywhere else you choose, leaving the honey remain in it until you wish to empty it. The frame that holds the combs may be turned with a crank on the top of it, or with gearing. I use the latter. The bearing on which the frame work runs, is a tin or zinc cone, say two and a half inches in diameter at the base, and running to a point at the required height. The cone is soldered to the bottom of the tub. One-half of the cover takes out, to allow the combs to be put in. One-third of the other half is made fast to the tub, and the other two-thirds hung to that, with hinges, which allow it to open, so that the frame work can be removed. When not in use for extracting honey, this tub makes one of the best boxes known for the good wife to keep her bread and cakes in.

GALLUP'S OBSERVATIONS AND EXPERIMENTS, which I have just been reading, are quite interesting. But I am led to inquire, are we drifting out into an open sea of difficulties? It must be so. And the worst of it is that Gallup, having made known to us our position, never attempts to help us out of it. First he says—"Sealed brood introduced into a strong stock fed just sufficient to keep the bees alive, would perish and become putrid in three days." What reason does friend Gallup give for that? Again—"eggs would not hatch in such colonies, until the bees commenced to gather honey, or until they were fed more plentifully." Does friend Gallup wish us to un-

derstand that bees' eggs are so very wise that they refuse to hatch, and be starved to death? Come, now, lend a hand to the wheel, and pilot us out of this difficulty. Why did the eggs of one of your queens refuse to hatch? Others have met with such instances. Who will explain it? And what about those "four partially fertilized queens?" I think they were something like my little brother's cow, which he was driving home one day, when a neighbor met him and inquired if the cow was farrow? Not understanding what was meant by the term, he answered—"little farrow, not much farrow though." How will friend Gallup account for partial impregnation? Is the theory exploded that "queens mate only once?" I know that lately it is claimed that queens have been known to mate two or three times; yet the old theory had a "loophole," and it could still be said that though they mated more than once, they were only fertilized once. But if Gallup's queens were a little fertilized, probably, had they mated again they would have been wholly fertilized. Then what of the theory? Now a certain writer in Iowa claims that when the young queen returns from the bridal tour, with the organ of the drone attached, the workers will sometimes immediately remove or pull it away. In which case the queen must mate again in order to become fertilized. He also claims that he has removed it himself three or four times, in one season, from the same queen, thereby preventing impregnation. Now, if it is absolutely necessary for the organ of the drone to remain for a certain length of time, in order that the queen shall become impregnated, it is quite easy to understand that if the bees remove this too soon, the queen will be only partially fertilized. Hence, if all written is true, some of us are in a fog. Can friend Gallup dispel it?

FRAME HIVES.

In the war of hives there is one question that is nearly settled. It is generally, if not altogether, admitted that frame hives are best. But which among the legion of frame hives that are offered to the public is best, is yet a question. Every maker and vender is crying up his own wares as best; and if somebody "spoils his horn," he gets a friend to blow for him. There are likely to be at least as many opinions as there are different hives. My own opinion is that not one in fifty has added any real improvement to the Langstroth patent. Yet do not understand me to say that it has not been improved; for I believe, and if I spoke as I feel, I should say I *know* it has. Aside from the shallowness of the original form, it has, in my opinion, three, yes four objections. First, it has a permanent bottom bound, and in order to clean out the hive properly in the spring, it is necessary to remove the frames. Yet almost every attempt to make a movable bottom board and have it attached to the hive, has been a bungling failure. Still such has been accomplished, and is therefore an improvement. Second, it is inconvenient in moving and taking out frames filled with honey. This difficulty has also been overcome. Third, the frames are too long, from front to rear. The combs in such a hive are more waiving, and are more likely to be built crooked. This, however, may be greatly overcome by raising the rear of the hive, which has

the same or nearly the same effect as shortening the frames; yet it is inconvenient to do so. No frame should be over thirteen inches long, inside measurement. I mean that portion of the top bar to which the comb is attached. Fourth, the frames are not adjusted at equal distances apart. Many will laugh at the idea that this is an objection. Well, laugh, and enjoy your opinion; but having tried both, I prefer frames properly adjusted at equal distances apart.

J. H. THOMAS.

Brooklin, Ontario.

[For the American Bee Journal.]

Bee-culture and Artificial Swarming.

MR. EDITOR:—I came very near losing patience in not getting my invaluable assistant in due time—I mean the BEE JOURNAL. There is nothing now of this world's goods that I value so much as the Journal, except it be the better half and the little ones. I am in receipt of it yesterday, and find in it as usual, many valuable things; and what pleases me above all is that it is likely to live, and is fighting its way bravely for existence. May it prosper, and continue to find "troops of friends," which it is evidently gaining every day. I expect pretty soon to win a number of subscribers for it. But as matters stand here in my neighborhood with regard to bee-culture, it is in rather a rude state yet; though for one I am bound to make efforts for improvement in the management of this important pursuit, in accordance with scientific principles. I am therefore a warm-hearted supporter of the Journal, and am indeed very sorry that I was not made aware of its existence before this current volume began. I am sincerely thankful to Mr. J. H. Thomas, of Brooklin, Canada, for telling me of it, when corresponding with him. Of course I am only a beginner in the business, last season being my second. That being an unfavorable one, I did not make any very great progress in increasing my stock; but if all is well, I intend doing something in the coming season.

I have read of many different plans of making artificial swarms, and have practised several methods, none of which please me exactly, though I was successful in every instance. I have thought of a new plan, at least with me it is new, and may be so with a great many more of the readers of the Journal. I will therefore make it public through that medium, and hope sincerely that some of your more experienced friends will give us their opinion whether it is likely to work or not. If it will work in that way or with some slight modification, it will suit me first rate. I contemplate trying it next summer, but desire previously to obtain the judgment of others. The process I propose is as follows: Get a hive arranged with combs, and remove a strong stock to a new stand, some distance from its former location, place the hive with the arranged combs on the stand of the stock thus removed. The bees that range in the field will fly to their accustomed stand. Finding their queen gone, and having no means left to

rear another, they will according to *bee-ology*, gladly accept any queen offered to them. But, after a considerable number of bees have collected, I should give them the queen caged, and liberate her after twenty-four hours. Whether it would answer to give them a virgin queen, is what interests me most; as I fear that when the queen takes her excursion trip, the bees may not yet have become fully reconciled to the new state of things, and hence accompany the queen never to return. If this plan can be made to work, it would be a great advantage, as the old stock would not be disturbed, and about every ten days a new colony could be formed. Where increase of stock is the object, as it is with me, it will be necessary to provide combs to fill the hives for the new stocks to be formed, in making colonies in this manner. Will not friend Gallup, or some of those possessed like him of much experience, report their views of the above suggestion? With best wishes, Mr. Editor, for you and the BEE JOURNAL, and wishing the latter came four times a month, I am yours, as ever.

C. WURSTER.

Kleinsburg, Canada.

[For the American Bee Journal.]

Does Bee-keeping Pay?

If you are in doubt upon that point, I suggest that you turn over the leaves of my record for 1869. It is the record of one much more truly a "novice" in these matters, than the experienced and enthusiastic correspondent who wears that name in the columns of the BEE JOURNAL.

My stock in trade for the spring of 1869, consisted of two old box hives almost destitute of honey, with few bees in each; about fifty frames of empty combs from Langstroth hives; and any required amount of interest in the subject. I began feeding syrup in March, using the inverted can with perforated screw top; fed plentifully till flowers came, using for each hive 5 lbs. 8 oz. of coffee sugar. Between June 11th and 28th, each of these stocks threw off four good swarms, which were duly cared for in Langstroth hives, with a fair allowance of empty comb as a start in housekeeping. From the two prime swarms I removed the honey boards a few days after hiving, placing one set of surplus boxes directly on the frames. July 8th, I hived a large swarm that came to me. Instead of two, there were now eleven stocks. The wet weather kept up a constant succession of clover blossoms; pastures and commons were white and sweet until late in September. But, "into each life some rain must fall," and just here came in my reverses. Not looking for any further increase of stocks, I left home for a few weeks. During my absence one prime swarm threw off a large colony (Aug. 13), which not being properly cared for, deserted soon after hiving. On my return I found a third swarm infested by worms, and broke it up. (N. B.—I plead guilty to carelessness in the use of old comb.) August 25, the same hive that had distinguished itself twelve days before, sent out a fair second swarm, which was secured, receiving the last of the old combs, and a full frame of brood

and honey from the parent stock. That was the end of swarming.

I took something over 250 lbs. of surplus honey. 100 lbs. came from the top of one prime swarm. Enough of this was sold at thirty cents per pound, to amount to fifty dollars. My eleven hives were all heavy, ready with some protection for out of door wintering.

Does bee-keeping pay? Have I answered the question? This result was obtained in an old fashioned way. Given, a season equally favorable, with all the "modern improvements,"—Italian bees, a "melextractor," &c., &c.,—and what might not be expected?

But my record fails to show what constituted really the largest share of the summer's profits. I did not know how to put it in figures. The still bright hours when, with shawl spread upon the grass, I was at home among my bees—those "singing masons building roofs of gold"—loving them just as much when they paid friendly visits to my wrapper, my hands, or my hair, as when they kept at a greater distance;—the health which came with those hours—the delight afforded by a most fascinating branch of natural history—the new ideas, whose value the future must determine—all this is beyond the reach of arithmetic.

Success to the Journal, and may it number more and more women among its subscribers and constant readers!*

C. S. ROGERS.

Elmwood, Ill.

* Aye, and allow us to add *correspondents* to the enumeration, for they always succeed admirably both as writers and apiarians. *Eccce supra!*—Ed.

[For the American Bee Journal.]

Robbing Checked Promptly.

"The first frame resists. I guess the bees 'have fastened it to the side of the hive. It will 'break, if you pull. Slip in the knife to loosen it.'" But young Frenchmen are presumptuous (perhaps young Americans are not less so). After having attended to the apiary in August, while I was confined to bed with sickness, my son Camille was, in his own opinion, already sufficiently advanced in bee-culture to dispense with the advice of his father. The frame was accordingly pulled out by force, leaving one quarter of the comb smashed in the hive, and another quarter down on the bottom inside.

This was about the last of September. For two weeks previous we had nearly every day emptied some combs by the melextractor, from one hundred full hives, and re-inserted them when emptied. The carrying to and fro of the honey had already aroused the robbing impulse of our bees; and before we could procure plates on which to place the smashed comb, we were surrounded by a host of eager bees, ready for a foray. With a spade I hastened to remove the ground wetted by the dripping honey, upon which the bees soon gathered. Then after directing my son to contract the entrance of the hive on which we were operating, so that only one bee could pass at a time, we left the scene, as we were notified that dinner was on the table.

When my son again left the dining-room, I directed him to look after the exposed hive, for I was far from feeling easy about it. He soon returned in great haste, saying—"the rucsee is robbed. The Italians enter it by thousands. The imbecile black bees do not know how to defend their hive." I inquired—"did you close the entrance so as to let only one bee enter at a time?" "No," replied he, "as the colony was very strong in numbers, I did not contract the entrance so much, only four or five bees could pass at a time, but the robbers have pushed away the blocks."

After putting on our bee hats, we hastily repaired to the spot. The humming of the bees was as loud as that commonly made by a large swarm, when issuing and on the wing. The robbed bees no longer made resistance. I began by contracting the entrances of the neighboring hives. Then I stationed my son in front of the one attacked, directing him to brush away with a feather duster (a leafy twig answers as well) all the bees seeking to enter, and let pass all those coming out. Meantime I procured two pieces of plank or blocks, about six inches square. I placed one of these on each side of the entrance, bringing two corners together so as to enclose a triangular space or yard in front of the entrance, and covered this yard with a piece of wire-cloth having $\frac{1}{4}$ inch meshes—taking care to adjust it so close that not a bee could enter the yard from the outside.—The robbers soon clustered on the wire-cloth, seeking for entrance, while some presented themselves under it, striving to get out. In eight or ten minutes, I suddenly pulled away the blocks and wire-cloth, instantly brushing away anew all the bees, till I was sure that no robbers remained; and then replacing the blocks and wire-cloth as before.

The hive remained thus shut up an hour or two. By that time most of the robbers, tired of fruitlessly seeking an entrance, had returned to their ordinary labor. The corners of the two blocks were then separated so, much as to allow one or two bees only to pass at a time. The inmates of the hive soon became accustomed to the entrance, while the robbers vainly endeavored to gain admittance through the meshes of the wire-cloth. If a few succeeded occasionally in finding the new entrance, they were immediately seized by the guards and summarily ejected.

After sundown, in order to let in the few bees belonging to the hive, which had not yet found the new entrance, I removed the wire-cloth, and replaced it early next morning. As soon as I thought that simply contracting the entrance of the hive would secure the colony from further attacks, I removed all my devices.

This mode of checking robbery will always prove successful, if the *rucsee* has a queen or the means of raising one, provided all the robbers are got out of the hive before the bees pertaining to it are confined.

C. DADANT.

Hamilton, Ills.

Young queens, whose ovaries are not burdened with eggs, are much quicker on the wing than old ones, and frequently fly much farther from the parent stock before they alight.—*Langstroth.*

[For the American Bee Journal.]

Foul Brood.

I do not "entirely concur with Mr. Alley in advising the immediate and complete destruction by fire of hives and combs, whenever a colony is found infected with foul brood." See *Bee Journal*, vol. 5, page 151. I claim to be posted in this matter, and have been advising beginners in bee-keeping for years. And when I speak from my own experience, I think I know what I am saying. Now, when those who confess to never having had a case of it, but depend on description for all they know, and then recommend a course directly opposite, I do not feel flattered. It would seem that they had no confidence in what I had said, or are ignorant of it. It is evident that Mr. Alley never read the "remedies attempted" on page 212 of "*Mysteries of Bee-keeping*," or if he had, had no confidence. It might have saved him the trouble of going over the same ground, where I had been twenty years before. Except in the fall, I see no economy in destroying a good colony of bees.

When Mr. Alley first "detected a peculiar smell, such as had never come in contact with my [his] olfactory nerves before, and at once pronounced the two hives infected with the disease," although he might have been correct in his diagnosis, was it proper to jump at conclusions in this way? It was his first case, and important. He presumes, on the evidence of one sense alone, that he is right. This way of deciding before the evidence is all in, is a dangerous one. Again, he says—"I know of but one way to cure this disease, and I strongly advise others who are troubled with this malady, to adopt my remedy."

Probably he knows of but one "remedy," he speaks of but one other. The presumption of having tried all, is objectionable. It was early in the month of June, and the bees were let to work, to see what would be done. The bees lived till the next spring. Then he commenced experiment by pruning, twice repeating what I had done, and failed just as effectually. Had he, when he first decided they were diseased (they were then strong and lived another year), simply transferred his bees to new clean hives, he would just as effectually have got rid of the disease, and had two colonies worth more than those he purchased, besides the chance of surplus. It would have reached long ways towards the \$200 lost in experiment.

Of what avail to "study the disease," unless to profit by it? I have been through here, and found a remedy without so great a sacrifice. A colony badly diseased in the fall, is not in good condition for winter. The dead larvæ occupy the cells needed for the mature bees in severe weather, to keep up warmth. Such colonies at this season might as well be destroyed. To winter them they would require stores and combs, which are not often at hand. The outside combs, and those in the corners, often contain good honey for the table, but not for the bees. The centre combs will have some honey cells mixed with cells of dead brood. I see no way to separate such, and of course it would have to be re-

jected, and should be buried out of the reach of the bees at once. If the hive was sufficiently valuable to pay trouble, it might be cleansed with scalding water, or exposed to the weather six months of our winter, and be perfectly healthy for the bees another year. I would not advise putting bees from such a colony into empty comb in any case, until they had used all the honey taken with them. Neither would I unite a small diseased colony with a healthy one, till they had used the honey. I have known apiaries properly treated, where the malady has diminished to less than one per cent. of what it was a few years since.

As to Mr. Morgan's experience, reported on page 147, he may have foul brood; but it is so different from any experience of mine, that I think he must be mistaken in the way it was first contracted. Its progress was too fast.

He says, some time in September he scooped out of the hollow of a tree, several buckets of comb, dead bees, pollen—and I suppose some honey also. At the end of several days it was found fermenting, was thrown out, the bees were found carrying some of it away. A hive near the place several weeks afterwards gave a horrible stench on opening it, unlike any thing before. The hive was full of dead brood. Six more were found in the same condition.

It is not clearly proved that this disease originated as he supposed. It was September—perhaps the middle, when the tree was cut; it might have been the very last when the fermenting mixture was thrown out. The larvæ, just ready to seal up, seem to be just the right age to be affected by it. At the end of September, in this latitude, all healthy stocks have usually hatched their brood. They may be later there; but I think it hardly possible that enough larvæ just the right age to take the disease, to fill the hive so quickly. Proceeding at that rate, they could hardly last a year, as Mr. Alley's did. I think the cause should be looked for months previous to cutting the tree. As for remedies, I approve of Langstroth's, so far as removing at once the whole from the reach of the bees; unless the bees were Italian, it would hardly pay to try to save them at that season. I would disapprove of even trying to set them three miles from any others. Suppose the bees from a tree in the woods take the honey from some of these hives, and deposit half way to the home apiary, what is to prevent a dozen more becoming affected mysteriously as these? If every hive was removed at once when attacked, we should hear less of the necessity of burning things.

M. QUINBY.

St. Johnsville, N. Y.

If the bee-keeper would not have his bees so demoralized that their value will be seriously diminished, he will be exceedingly careful to prevent them from robbing each other.—L. L. Langstroth.

The use of woollen gloves, when operating among bees, is objectionable, as everything rough or hairy has an extremely irritating influence on bees.

[For the American Bee Journal.]

That Bee Disease.

MR. EDITOR:—I see in the November number of the BEE JOURNAL, page 101, a communication from J. W. Seay, in which he demonstrates the cause of the Bee Cholera "as clear as mud." I cannot see how he could come to the conclusion he did, after examining as many hives as he says he did. But even admitting (which of course I do) that those *awful* honey dews did take place in his locality, that does not prove that it was the same all over the country. Wherever the bees died, the bee disease, whatever it was, was general everywhere that I heard from; but this great honey dew was not. Nor can I see why the bees should leave the hive if they died of old age, particularly when but few colonies died till after the weather was cool enough to confine the bees to their hive, some living till midwinter and even longer, and then dying. If they died of old age, why were they not found dead in the hive? It is not very common for bees that die with age, to leave their hive in winter time for that purpose.

I live in Eastern Indiana, and I also own bees in Northern Illinois; and by close observation I am satisfied that the bees died in both places from the same cause; and I am sure we had none of those sudden changes from scarcity to abundance, that Mr. Seay speaks of. It was a bad honey season straight through, in this part of Indiana; no surplus honey at all.

As soon as cool weather began to confine my bees to the hives, I noticed an unusual amount of dead about the entrances. I watched them closely and found that however cold the weather might be, more or less of the bees would come out. Some would die near the entrance; others would get several feet from the hive, then drop down and die; and some would take wing and fly out of sight when it was too cold for them to return, even if they had been healthy. They would commence coming out of their hives in the morning, even before it was quite light, no matter how cold it was. I soon noticed that many of them discharged their feces in the hive, the entrances would be perfectly blackened therewith, and the tops of the frames would be in the same condition. If the day was slightly warm, there would be quite a stir among the bees; but of those that appeared to have the disease the worst, few would return. I watched them closely every day; whether it was cold or warm, wet or dry, they would come out, more or less, till every bee was gone, and in every case more or less honey was left, though not quite so full as Mr. Seay says his hives were. My neighbors' bees went the same way, and when asked they said the bees swarmed out and left; but, as Mr. Seay says, when asked whether they had seen them swarm out to leave, the answer was—No, but they must have done so, for they are gone and left plenty of honey! On examining those hives and finding them daubed as mine were, I told my neighbors that their bees did not swarm out and leave, but feeling an irresistible impulse to discharge the contents of their bowels, they left for that purpose, and never returned.

I watched my bees closely till ten stocks were dead. All went the same way, young swarms dying first, and every stand in the yard affected in like manner. I saw that something must be done or I should not have a bee left by spring. I examined them all, and found them all more or less affected by disease. Old stocks that had plenty of old honey, were not so bad. All the new honey was uncommonly thin. I went to work and took all their honey from them, added a portion of white sugar, boiled it down, skimming it clean, and then fed it to them again. They replaced it in the combs, and from that time on I did not lose another stock; but they did as well as I ever had bees to do. I told my neighbors what I had done. Those of them that were using movable frame hives did likewise, and saved their bees. Those that used the common box hives, could not adopt this measure, but some of them fed their bees with sugar syrup and saved nearly half of them. Those that trusted to luck altogether, lost all so far as I know. One man, who had twenty-five stands, said it was all in luck any how; so he did nothing, and lost every bee. So much for the *Bee Cholera*.

If it was old age that was killing off the bees so fast, why should the altering of their food from very thin to good thick honey stop their dying? In my opinion the bee-disease, call it what you please, was caused by bad food; and when the bees were confined to the hive by cold weather they could not retain the contents of their bowels, and it being contrary to their nature to discharge their feces inside of their hives, they made an effort to get out; and once out, they never returned. Thus their numbers wasted away, until all were gone. This, at least, is my experience, and I watched them closely both in Indiana and in Illinois, and on the way, going and returning. I know there is such a thing as bees gathering too much honey, and thereby preventing the queen from laying the proper amount of eggs, and the stock finally dying out from that cause. But that was not the case in 1868, in any locality that I visited.

B. PUCKETT.

Winchester, Ind., Feb. 10, 1870.

[For the American Bee Journal.]

Can robber bees be joined to a weak colony without caging the Queen?

In apiaries of large size it sometimes occurs that weak colonies are attacked by stronger ones, and robbed; and even a careful bee-keeper may not always discover it before the robbers have got a good start. A reporter to the BEE JOURNAL, I do not recollect in what number, advises beekeepers in such case to capture the robbers and unite them with the weak robbed colony. Now, does practice prove this to be good advice? Before I read the article, I had already, at four different times, attempted to remedy robbing, by shutting up the robbers, and placing the robbed colony in my cellar for a week or longer. In three cases out of the four the fertile queens were killed; and I therefore came to the conclusion

that it was unsafe thus to shut up robbers with a weak colony.

In all cases where it may be desirable to shut up the robbers, I would advise the bee-keeper to cage the queen, and keep her caged for at least three days. But I cannot even then recommend such a process. The robber bees, after having been thus confined for eight or ten days, return in great numbers to their former hives, and in most cases recommence robbing immediately. Only where the bee-keeper can remove the robbed colony a mile or more from the old stand, would I advise shutting up the robbers, for the purpose of uniting them with those attacked, in order to strengthen the weak colony. Even in such a case I should greatly prefer to strengthen a weak colony by introducing in it a supply of bees procured from another apiary. A quart of bees taken from a distant apiary, kept confined in a hive with food, but without brood, can, without the least danger, be united in the evening with a weak colony that has a fertile queen. In this way, I have frequently in the spring, strengthened colonies which were so weak that they would certainly have perished, even if they had escaped the notice of robbers. A. GRIMM.

Jefferson, Wis., Feb. 1870.

[For the American Bee Journal.]

Patent Comb Guides.

I see by the AMERICAN BEE JOURNAL and the Rural New Yorker that K. P. Kidder has purchased of G. H. Clark, the patent right for the triangular comb guide. I have used the Langstroth hive for ten years, and have never used this comb guide; and I do not know what any one else wants to use it for. It is not a sure guide in the Langstroth frame, and I never saw a Langstroth hive with that kind of guide that had all straight combs; and I never saw a Clark hive that had all straight combs. As a general thing, six combs in the Clark hives are straight, while the seventh is very thick, and on one side, about half way down, the bees will start a thin comb, too thin to store honey in, and not thick enough for brood comb. I have seen a great many Clark hives where the combs ran exactly across the guides.

There is but one sure and simple comb guide, and that is the one that I have used for years. It is sure in all hives, and in every instance where it has been used it has proved a success. I have nothing new to recommend to most old bee-keepers, but to new beginners it is worth knowing, to say the least.

Instead of this patent triangular comb guide that has caused so much trouble during the last ten years, I use a "flat bar." To this I stick any old worker brood comb—no matter how old and mouldy it is, it is a sure guide. This I cut into strips, from one to two or three cells in thickness, according to the quantity I have on hand; but when such comb is scarce, one cell deep will do. With melted rosin and beeswax (not honey and beeswax, as your printer once made me say), I stick the combs to the "flat bar." The wax must be hot, and the work is done quickly, and the combs will not come off. When no old comb

is at hand and cannot be obtained, I would turn an old box hive bottom up, and cut off two or three inches of the worker comb. This should be done early in the spring, before it is filled with brood. If no box hive is handy, take one or more frames from a movable comb hive and cut from them enough comb to make guides for a large number of frames, if needed.

The idea of raising the rear end of Langstroth hives, to make the bees build straight combs, is all moonshine. I have never seen an instance yet where the bees have done it.

I hope no reader of the American Bee Journal will be found foolish enough to pay Kidder, or any one else, one cent for the right to use this patent comb guide.

It is but a small job to put guide combs on frames enough for twenty hives. Simmer the wax and rosin in a shallow tin vessel, say two inches deep by six inches wide, and ten or twelve inches long. Old combs cut easy with a thin knife that has a straight rough sharp edge, made hot by dipping it in hot water just before drawing it across the comb.

H. ALLEY.

Wenham, Mass.

To attach strips of guide comb to frames or bars, the German bee-keepers use a cement composed of curd cheese and slaked lime, adding a little borax dissolved in water, to keep the cement plastic during the operation. This is more easily managed than a composition of wax and rosin, with no risk of destroying the guide comb. Dzierzon has always used the flat bar provided with such foundations to secure straight combs.—ED.

[For the American Bee Journal.]

Puzzling Points.

In Vol. 5, No. 3, page 61, of the BEE JOURNAL, Mr. Argo is somewhat puzzled. I have never been in the queen raising business—only raising queens for my own use; therefore will not attempt to answer his question, but will give some of my own experience.

I have had queens raised from pure mothers fertilized by black drones, that produced all three-striped workers, but would produce a majority of black queens. I have had queens raised from hybrid mothers and fertilized by pure drones, that produced handsomely marked workers and very light-colored queens. I have had queens from pure mothers fertilized by drones from a hybrid queen, that produced well marked workers, though all their queens were very dark-colored.

I am strongly inclined to be on the side of Mr. Thomas and Mr. Benedict, as to the impurity of drones from a hybrid queen. At all events, give me my choice and I will always take the queen that is raised from a pure mother and fertilized by a drone from a purely impregnated queen. On the other hand, let a person take for granted that drones from a hybrid queen are pure, breed in and in from such stock, and he will very soon find that he has mixed blood. There is something about this that has never yet been satisfactorily explained. We have queens that are partially fertilized, so that a small proportion of their eggs hatch workers and the rest drones. We have

queens that produce all drones. We have queens that lay eggs which never hatch, either drones or workers. And we have queens that never lay an egg. And all these from the same mother, and all raised at the same time. I have taken eggs and larvae from a pure queen, and given them to black bees to hatch and nurse, removing the black queen and all the brood, and substituting all Italian brood; and they raised all very dark-colored queens, and all those queens produced dark-colored workers. At the same time, queens raised from the same brood, and by Italian nurses, were all light-colored, and all produced light-colored and well-marked workers; and this too when all the drones that fertilized those queens were raised in one hive and produced by one queen. In fact, I have never succeeded in raising handsomely marked and light-colored queens, when they were nursed by black bees. I will not say that such has not been the case with others. I am just giving my own experience in the matter. I am not going to instruct others in what I do not know myself.

I am as much puzzled about some of these questions as Mr. Argo himself, or any one else can be. When I get hold of a queen that produces duplicates of herself, when raised by Italian nurses, and her workers are unmistakably well-marked, I am satisfied with her. Of course there is a slight difference in the coloring when raised at different seasons. Queens raised in full stocks when apple, plum, or basswood trees are in full bloom, will be a shade lighter than those raised late in the fall from the same mother.

If Benedict and Thomas were as anxious to palm off impure queens as some others, they would not have said as they did; at least that is the opinion of

E. GALLUP.

Orchard, Iowa.

[For the American Bee Journal.]

Novice.

DEAR BEE JOURNAL:—Once more we greet you, and take great pleasure in informing you that our forty-six stocks of bees are all safely wintered, thanks to the Bee House. We can scarcely believe that the whole number put in, are really all on their summer stands, nearly as heavy as when put in. But such is the case. We set them out to-day (March 10). Some would have persuaded us that they would have been better left in a little longer. But we think they are better out now, if properly protected and cared for.

They seemed about as anxious to try their wings again, as we were to have them do it; and we are now going to furnish them with all the rye and oat meal they can be induced to take up.

Mr. Langstroth gives as one objection to special repositories for wintering, that the bees do not commence raising brood so early, but we think that with the start ours already have (and nearly all we have examined have considerable brood), that we shall have plenty of it as soon as it is desirable.

We are going to try stimulating some of them that are not quite as strong as the rest, and so we too want a bee feeder. Last year we used glass

jars or tumblers, with a cloth over the top; but there was considerable trouble to fill these when they required it, and after some experimenting, we have hit upon something that answers our purpose admirably. What we required in a feeder was something that could be filled quickly; something that would not be expensive, as we might need a great many; something that would not be too bulky, as we dislike above all things to have such implements around in the way; and something that would not be getting all sticky and daubed over with honey, as we fear we might take a dislike to the business.

Now, Mr. Editor, we will tell you all about it and make it public, if you will first head it (for we want a little of the credit of the invention),

NOVICE'S BEE-FEEDER.

Get three pieces of glass all alike in size, say three by four inches square; stand them up on end, so as to make a hollow prism; slip a rubber band around them, about half an inch from the lower end; now lay a piece of thin cotton cloth over the top, and with your hand crowd it down inside so as to come about half an inch from the bottom; put a second rubber band over cloth and all, about half an inch from the top; cut off the cloth close to the top band, on the outside, and it is done. Set it over a hole in the honey board or top of the hive, and all that is necessary is to pour in your honey or syrup, and the bees will take it through the cloth to your entire satisfaction. You can feed fifty stocks, as fast as you can go from one hive to another; not a bee can get in your way; and the way the little chaps crowd in around the bag is a sight to see.

To make them more nicely, get some of the "women folks" (we really do not know how we should get along *without* them, though it is a task sometimes to get along *with* them) to sew you some nice little bags of three triangular pieces of cloth. When the top is rolled over the outside of the top of the glass, and your band put on, it looks quite tasty.

When you get through with them for the season, slip off the bands; get those same "women folks" (that is, if you have got the right side of them; and you can't keep bees unless you have) to scald the whole apparatus, and then you can pack them away in a nice little box (the feeders we mean, of course; not the "women folks") till wanted again.

Any broken glass will make them; or you can use wood, but as in that case you cannot see inside, and it is not so clean as glass, we think the latter will pay. Strings or wire will answer in place of the rubber, though not so convenient.

Now, Mr. Editor, will you allow us to discuss BEE JOURNAL in these pages? You allow almost every liberty, even for patentees to crack up their respective hives and inventions, almost as much as if they paid a dollar a line for the privilege. We think you once said that in all these discussions you had faith that the truth would come to the top at last; and on looking back over the pages of the Journal, we were astonished to find how much truth *has been* brought out.

Well, we have three Bee Journals—or rather one, and two *so-called*—and another is about dawning from Missouri. We don't know what

this new one may be; but we can't help contrasting our old AMERICAN BEE JOURNAL, with the full liberty allowed on its pages, with some of the new ones that don't allow or at least don't mention the existence of any other form of hive than the one owned by the publisher, and advertised all over the paper continually. We should not be surprised that the publishers of such might make a good thing of it, if they sent their papers *gratuitously* to every body.

Another opens with a Gift Enterprise, on a system of luck and chance, and promises to tell his subscribers how to make more honey from every swarm of bees than ever Jasper Hazen's hive would give, good seasons and bad.

What would our BEE JOURNAL be, if only one kind of hive was to be considered? For this very reason, we should consider the *Rural New Yorker* worth more as a bee journal than all that we have seen, except the one on whose pages we are now writing.

Orange Judd & Co. once said, that they had nothing to sell, except the *American Agriculturist*; and that their whole business was to make that as valuable as they could to *every body*. Such being your motto also, cannot we well afford to pay two dollars per annum for the AMERICAN BEE JOURNAL, no matter what others charge? If we are speaking strongly, we have only to say that standing up for old and tried friends is only another "well rooted" peculiarity of

NOVICE.

P. S.—Next month we will submit our statement, with that of friend Argo, on our respective year's work for 1869. To get a queen or lose a queen, "that's the question."

[For the American Bee Journal.]

Sacred History of the Bee and Honey.

MR. EDITOR:—As the columns of your excellent Journal are ever open to the discussion of anything pertaining to the bee and its products, I have thought it might perhaps not be uninteresting to your readers to know something of its sacred history, and as I am to-day unable to get around, I will spend the time in the examination thereof.

To begin. The first intimation we have of such an insect as the bee, is by way of inference, and that from reading Gen. 24, 59 in connection with Gen. 35, 8; where we have the Hebrew name—Deborah—given. This, according to the generally received chronology, was about the year 1955 B. C.

Again, in Gen. 43, 11 the patriarch Jacob, in giving directions to his sons on going down into Egypt a second time, tells them to "take of the best fruits in the land" with them—literally that which was praised the most, or "the song of the land;" and, among others, he names "a little honey." The things enumerated, as we are informed, grew well during a drought; and as a famine now prevailed, would be more highly appreciated in Egypt. Besides, we are led to the belief that it was an article of commerce previous to this time; Gen. 37, 25, and inferences drawn from the Homer and Herodotus at a later date.

Again, in Lev. 2, 11 we read that honey was not allowed as a burnt-offering amongst the Israelites. The reason for this we cannot now recall.

But in Deut. 1, 44, we have the name of our industrious friends brought directly before us, and in a sense which does not highly recommend them—that is, of chasing. This gives us some intimation of their character then, and which later writers confirm. *Vide*, BEE JOURNAL, Vol. 5, Nos. 5 and 6; and this enables us the more fully to understand the expression of the Psalmist—"They encompassed me about like bees." Ps. 118, 12.

Again, in Deut. 32, 13, honey is spoken of as one of the blessings conferred upon the chosen people, in that they should even "suck honey out of the rock," and their land should "flow with milk and honey."

Again, the case of Samson, Judges 14, 8, in which both bees and honey are spoken of, under peculiar circumstances, being found in the carcase of a dead lion, which he had some time previously slain. We quote from an article before us: "The lion which he slew had been dead some little time before the bees took up their abode in the carcase, for it is expressly stated that 'after a time' he returned and saw the bees and the honey in the lion's carcase; so that if any one here represents to himself a corrupt and putrid carcase, the occurrence ceases to have any true similitude, for it is well known that in those countries, at certain seasons of the year, the heat will in the course of twenty-four hours so completely dry up the moisture of the dead camels, that without undergoing decomposition, their bodies will long remain like mummies, unaltered and entirely free from offensive odor."—(Oedman.)

Again, in 1 Samuel 14, 26-29, honey is spoken of, in connection with a curse; and the eating of it came well nigh being the death of David's most intimate friend in the days of his adversity; but which would have resulted in much more good, had all at that time participated.

Again, in Ps. 19, 10 and 119, 103, Prov. 5, 3; 16, 24; 24, 13; 25, 27 and 27, 7; and in Songs of Solomon 4, 11 and 5, 1, there are comparisons made of honey and the honey-comb, to sundry moral virtues, &c.; and in Ezek. 3, 3, and Rev. 10, 9, by way of contrast.

In Isaiah 7, 18, the Assyrian nation is compared to a bee; and this no doubt has reference to them as an instrument of punishment upon the Jews.

The foregoing passages are the principal ones relating to our subject, found in the Old Testament. We will now take a glance at the New. The first that meets the eye here is found in Math. 3, 4, in connection with Mark 1, 6, in which the manner of living of the forerunner of Christ is spoken of; and as J. D. M. in the February number has remarked that, since honey formed a prominent link in the chain of man's redemption, surely this ought to give us some encouragement in the prosecution of apiculture.

Again, in Luke 24, 42, we find the Saviour himself indulging in eating of a piece of honey-comb; and would that all might profit by the

lesson there taught, that in very deed he was risen from the dead, and rejoice in their Divine Master.

In conclusion, nearly all the writers of the past eighteen centuries have given, directly or indirectly, the subject of our remarks a passing notice. And from this we see that the honey-bee has a written history of over three thousand eight hundred (3800) years—a history intimately connected with that of our own race; and that its products have ever been, as they still are, articles of commerce.

J. W. BARCLAY.

Worthington, Pa., Feb. 19, 1870.

[For the American Bee Journal.]

Price's Revolvable, Reversible, Movable Comb, Double-cased, Sectional Bee-Hive. The Casket.

It is hung horizontal and angling. It is the best hive for wintering, breeding, or stimulating bees; and has the best surplus "sectional" honey boxes and storage facilities.

Mr. Editor, and all bee-keepers, I wish to bring to your notice the description and superior advantages of the above hive, over all others, on the above enumerated points, in accordance with the expressed wish of several correspondents.

In the first place, I wish to say that having failed to winter my bees satisfactorily in the several ways it is usually done by bee-keepers; and after making all kinds of experiments, I have perfected a method and invented and patented a simple yet efficient hive and apparatus for its accomplishment. I claim it to be the best hive and method of wintering bees, either on their summer stands, in a bee-house, or in a cellar, by the removal thereto of the casket containing the combs, bees, and honey. It is a sure protection from loss and destruction of bees on warm days, in winter and spring, when there is snow on the ground, from their flight and falling on the snow. This misfortune with me has been as destructive as cold—and the warmer the hive, the more destructive have been warm days.

This hive is also the best and safest ventilating hive ever made; it is impossible to suffocate a swarm of bees confined in it; it cannot be done under any circumstances. But a swarm put away for wintering in it, is safer from the usual mishaps of wintering, than by any other mode of wintering yet devised.

I also claim for my hive the best and warmest breeding apartment; it being the best ventilated also. It is the best hive for either the bees reaching the combs, or the shape and position of the combs for natural clustering of the bees for rearing and protecting the brood, and to facilitate the queen's laying eggs in the combs in circles.

It is also, by its facility of revolving and reversing the "casket" brood chamber, the best hive to stimulate the queen to the production of brood, at any wished for period in the early spring. The brood apartment can also be examined, without moving the surplus honey boxes or surplus sections; making it the best and handiest hive for artificial swarming.

The V shaped bottom makes it also the best

self-cleaning hive, harboring neither chips of wax or other foul matter.

By means of my reversible casket, I claim for my hive, the best means of stimulating the queen to the production of brood during a temporary drouth in summer. The revolving of the casket will immediately stimulate an idle colony to work, during the honey harvest—the same as an interchange of combs, from place to place; without danger of maiming or killing the queen. By means of it, likewise, I can get straight combs in my sectional hive, by removal of the platform. Then the casket and sections are laid horizontal, or flat, on the bottom of the exterior case; and when the swarm have filled the sections with combs, the casket is placed on the platform, and the combs are hung angling. Thus securing straight combs, which cannot be done in a full hive of empty frames hung angling.

I also claim that from the shape of my hive, and by the use of my sectional surplus honey boxes (they being on a level with the brood chamber), I secure the best surplus honey facilities. The bees can reach the boxes or sections, without going into the breeding apartment. My boxes are likewise of the best shape for the honey emptying machine, for home use, or for transportation to a distant market.

The descriptions and drawings will appear, as soon as I can get the latter engraved.

JOHN M. PRICE.

Buffalo Grove, Iowa.

[For the American Bee Journal.]

Bee Stings.

MR. EDITOR:—In these days of waiting, while the little honey-gatherers are closely closeted at home, it may be well to take thought for the future. Spring is fast hastening along, and the bees will soon be abroad. We may now tell how heroic we were last season in passing among the hives and in handling the bees without veil or gloves; but a test of courage is soon to be demanded again. Inasmuch as we dread to be stung, we are enlisted in sympathy for those who may be so unfortunate. Some of our best officers among apirians occasionally get wounded; while many of us who rank among the novices, could give credit to scores of bees which left a sting with us, as a piercing memento of their zeal. We are safe in saying, we know we shall be stung if there are any bees in our vicinity. How quickly all our bravery subsides, when the sweet little bee is avenged. Benevolent hearts have studied to find a "healing balm." We have no reason to doubt their success, and really believe it may be found while carefully passing through the following list of remedial agents.

1. The first thing to be done after being stung, is to pull the sting out of the wound *as quickly as possible*. After the sting is removed, the utmost care should be taken not to irritate the wound *by the slightest rubbing*. However intense the smarting, and the disposition to apply friction to the wound, *it should never be done*, for the moment that the blood is put into violent circulation, the poison is quickly diffused over a large part of the

system, and severe pain and swelling may ensue.

—L. L. LANGSTROTH.

2. Cold water. In my own case I have found cold water to be the best remedy for a bee-sting. The poison being very volatile, is quickly dissolved in it.—*Ibid.*

3. The juice of the ripe berry of the common coral honeysuckle (*Lonicera caprifolium*) is the best remedy. The berries or the expressed juice may be preserved in a bottle, well closed, and will retain its efficacy more than a year.—ANDREWS.

4. The milky juice of the white poppy.

5. Leaves of the plantain crushed and applied to the wound, are a very good substitute when water cannot be obtained.—L. L. LANGSTROTH.

6. Spirits of hartshorn. In cases of severe stinging its internal use is also beneficial.—BEVAN.

7. The juice of tobacco.

8. Catch as speedily as possible another bee, and make it sting on the same spot.—*English Apianian.*

9. Bathe the wound in chloroform.

10. Take a small piece of saleratus, moisten and apply it to the part once or twice, and almost immediate relief will be experienced.

11. Take muriatic acid and dissolve saleratus in it, as much as it will take up. Apply this, as soon as stung.—G. B. AVERY.

12. A raw onion cut in halves; one half applied till it becomes warm; then change for the other half.

13. Mud or clay made wet, and changed often.

14. Soft soap and salt.

15. Select three species of plants, either trees, shrubs or herbs; take one leaf from each, and bind them on the wound.

16. Bathe with a solution of chloride of lime.

17. Wet a piece of indigo, and rub it on the spot.—AFFLECK.

18. Apply aqua potassa.

19. The great secret after being stung, is to keep the spot cool, and, *not rub it at all.*—KIDDER.

20. Dr. Latour proposes the following: 1st, pull out the sting; 2d, foment the place with iced water, or else extract of ammonia; 3d, apply an impenetrable coating of collodion, rendered elastic by the addition of one-tenth part of castor oil, whereby the production of heat in the living tissue is prevented and the inflammation avoided.

21. Bruise a few leaves of the catmint plant (*Nepeta cataria*); press out the juice, and apply it to the wound.

22. Have about three quilts or comfortables spread on a bed. Then wet a sheet in cold water, wring it, and spread it on the former. Wet another sheet, and wring out the water so that it will not drip. Spread this on the first sheet. Now strip the patient to the skin, lay him on the wet sheets on his back, and fold them about him; then fold the quilts around him in the same manner; and put wet clothes on the face and forehead. Let him lie thus for thirty minutes, and all will be right.—E. GALLUP.

23. A strong solution of sugar of lead.—O. DYER.

24. A freshly prepared solution of hydrate of lime (lime water).

25. First extract the sting, then wash the part with cold water, *rubbing it well* for half a minute;

then *rub with a dry towel* for half a minute more. Then apply about 4 teaspoonfuls of spirits of camphor, and *rub for another half minute.*—M. SMITH.

26. Apply kerosene oil to the wound.—P. R. RUSSELL.

27. Prepared chalk made into paste with water or saliva, and applied to the wound.—J. B. BARTON.

28. Coal oil applied to the wound renders immediate relief.—P. BRICKLEY.

29. For bee-stings use spirituous liquor internally and externally. Ammonia is good as a wash. Water is the best of the solvents, and is therefore good.—J. M. MARVIN.

30. Pull out the sting, and pass a needle into the wound till you can press out some blood. It will prevent swelling.—J. KIMBALL.

31. Extract the sting, and keep the spot moist with spittle.

The editor may perhaps think, by this time, that I should ask pardon for this intrusion. Perhaps I should. I certainly wish him no harm in the perusal. The list may serve as a curiosity, if nothing else. No. 1, says that the wound should *not be rubbed at all*; while No. 25 regards the rubbing as very essential. In my own case, I found No. 21 proved very satisfactory.

HENRY C. BLINN.

Shaker Village, N. H.

[For the American Bee Journal.]

When does a young queen commence laying drone eggs?

AND,

Will introducing a young fertile queen prevent swarming?

In the latter part of June, 1865, I concluded to introduce a young fertile Italian queen in a colony of black bees, which was strong, but occupied a small hive of only about 1300 or 1400 cubic inches. When removing the black queen I noticed that three frames, which I had previously inserted, were nearly filled with drone combs, containing eggs and larvæ from the black queen. I took away all these drone combs, and introduced the young Italian queen, which had commenced laying the day previous. She was confined in a queen cage, but I liberated her after the lapse of forty-eight hours. Three days later I examined this colony again, to see whether the Italian queen was accepted or not. I found the three frames again filled with drone combs, and every cell contained an egg! I also found three queen cells started in the upper part of the hive, but still empty. I made another examination three days later, and found small larvæ in the drone cells, and two eggs and one very small larvæ in the three queen cells. The basswood trees were at this time in blossom, furnishing a very plentiful supply of honey. On the following day a swarm issued from this hive, and was accompanied by the young Italian queen. I feared, of course, that, unobserved by me, the bees had somewhere reared a queen from the brood of the removed black queen, but soon

found that this was not so. The queen cells before observed, were sealed in due time, and on the sixth day thereafter the two youngest cells were removed. An Italian queen and a large number of Italian drones were hatched, and to my great gratification the young queen subsequently proved to be purely impregnated. The black swarm with the Italian queen, became changed to a pure Italian colony, by the middle of October.

That same season, on the 7th of May, I inserted three queen cells from an Italian colony, in three black colonies respectively, from which their queens had been removed the day previous. The queens hatched from these cells May 11th, were impregnated, and became fertile in due time. Each of these three colonies swarmed on the 15th of July. Only a few Italian workers had yet commenced out-door labor at this time; but nearly all the workers in those three swarms, at the time they issued, were Italians.—Young fertile queens introduced into a colony are therefore not always a preventive of swarming. In fact, I have not yet discovered any method by which swarming can be prevented, except by weakening the colony. Mr. Quinby's queen-yard would not be a preventive with me, so long as there was a chance for another swarm in the apiary to come out, as the bees would join such swarm, if they missed their own queen on coming out. Prime swarms, with old queens that could not fly, united in three instances with second swarms and were satisfied with the young virgin queens.

A. GRIMM.

Jefferson, Wis.

[For the American Bee Journal.]

The greatest enemy to Bee-keeping.

A correspondent says I have been reading the BEE JOURNAL, have never kept bees, but am now inclined to try my hand. First and foremost, what diseases have I to contend against? Or what is the greatest enemy to bees and bee-keeping? And he requests an answer through the Journal, but does not give his name or address; and I am strongly inclined to think that his questions are asked for the purpose of quizzing or puzzling. Nevertheless, I am going to comply with his request; and here is the answer—IGNORANCE. Just that one word answers the question, and covers the whole ground. Ignorant bee-keepers destroy more bees than all other causes combined, according to my experience.

In my own ignorant experiments during my lifetime, I have destroyed hundreds of dollars worth of bees; and now, when I look back on some of those foolish experiments, I wonder at my own former ignorance. But I never became discouraged, I always learned something by my failures. I will relate one instance and perhaps more. In my first experiment in wintering bees in the cellar (and I had then an excellent, dry, airy cellar) I set in twelve good strong heavy swarms, and left the balance on their summer stands as usual. Understand, that I had *no* books to guide me in any of my experiments, such as bee-keepers have now-a-days. By the

first of February ten out of the twelve, were all dead—having died with the dysentery, course, as the front of the hive, bottom-board, and combs, all distinctly showed; and I concluded at the time that it was the malignant type, and that physic could not have saved them; at least that was my opinion, hastily formed from a *post mortem* examination. But I soon began to doubt the truthfulness of my conclusions, for the other two stocks were in excellent condition. They were all in common chamber hives, all ventilated alike at the bottom; but upon examination of the two that were in good condition, I found that in setting them in the cellar I had accidentally uncovered the holes into the chamber, and as the doors to the chamber did not fit closely, there was an abundance of upward ventilation. The ten that died had no upward ventilation whatever. Thus we see that ignorance in this case destroyed the ten stocks, worth seventy dollars; but accident saved two. But not exactly satisfied that I had discovered the true cause, the following winter I set in twelve more colonies, to ten of which I gave upward ventilation, and to the other two I gave only ventilation at the bottom. In about three weeks after setting them in, I discovered that the two had the dysentery and began to smell badly, with large quantities of dead bees on the bottom-boards and the combs damp and mouldy. I then opened the holes at the top, and they soon came all right again. The ten all wintered in excellent condition, and did not consume near the amount of honey that those did on the summer stands.

No person at the present day need commence bee-keeping under the same disadvantages that I had to contend against. Now you can have the experience of others to guide you when you begin.

E. GALLUP.

Orchard, Mitchell Co., Iowa.

This has been a terrible winter for bees in Berkshire; or rather the last summer was so unfavorable for the production of honey that the bees could not gather a sufficient quantity to carry them through the winter. Out of 19 swarms belonging to Peregrine Drew of Pittsfield, one only survives. John Barnard had 21 swarms last fall, and "took up" 13, obtaining but 28 pounds of honey, and this he fed to the remaining hives, but only three are still alive. H. D. Burghardt has lost 22 out of 25 hives during the winter. Live bees will be high in the spring, and honey will be higher next summer.

STRUCTURE is always expressive of the habits of the bees, and is as sure a line of separation, or means of combination, as instinct could be were it tangible. Hence the conclusion always follows with a certainty, that such and such a form is identical with such and such habits, and that in the broad and most distinguishing features of its economy, the genus is essentially the same in every climate; for climate does not act upon these lower forms of animal life, with the modifying influence which it exercises upon the mammalia and man.—*Shuckard*.

[For the American Bee Journal.]

Confinement of Honey Bees.

How long may honey bees be kept in a cellar, without injurious effects from continuous confinement?

In the spring of 1868, I rented the privilege of starting my southern apiary, and removed to the location one hundred colonies, over a very rough road. The owner of the lot on which I had started the apiary, becoming dissatisfied, I was compelled to remove the hives in the fall to another location, about a mile westward, to a timbered lot, which I owned there. Not being apprised early of the necessity of making the change, I did not commence digging a cellar for the reception of bees till the beginning of October, and as the road over which they had to be carried always becomes impassable as soon as rainy weather sets in, I deemed it advisable to make the removal on the 20th day of that month. As there was then neither house nor fence on the premises, I had to run the risk of storing the colonies in the cellar, just finished, with the mortar still soft; though a frame house was erected over the cellar shortly after. As soon as the house advanced I put a tenant in it, who fearing that a stock of potatoes and turnips which he intended to winter in it would freeze in the cellar, plastered up all the crevices between the ceiling and the side walls. Having other pressing business to attend to at the time, I neglected to instruct the tenant to make provision for ventilation. It happened also that the outer cellar door had swollen from dampness and could not be closed, and a space about an inch wide remained open. This was all the chance the bees had for pure air and ventilation. When I visited the place, six weeks later, I found, to my great surprise, the bees perfectly quiet and healthy, and the hives dry. A number of bees, however, that had crawled out, lay on the floor, covered with mould. Six weeks later, the condition of the bees was found to be about the same; and so likewise on a still later examination.

I did not take these bees out before the 14th and 16th of April following, they having then been in the cellar about a week less than six months. I commenced removing them on the 14th, but owing to cold and rainy weather, I could not finish the work till on the 16th; and this was the condition in which I found them. Fifty-eight colonies in eight-frame Langstroth hives, were all of them alive, with very few dead bees. The combs were dry and clean, without the least particle of mould; and no candied honey was found in the combs. Of sixty-three box hives, which were inverted with the bottom board left on, four had died, and nine had combs more or less mouldy. Those that were not mouldy were in an exceedingly good condition. Those that had moulded were probably weak when wintered in; and of the four dead ones, two had probably been queenless ever since swarming, and had been overlooked, as I found on examination of the combs that these contained a large amount of bee-bread.

The whole number of colonies had consumed a very small amount of honey, and appeared in every respect in excellent order. How very

damp the air in the cellar must have been, may be inferred from the fact that the cotton cloth on a bee hat, which had been carelessly left on a cellar window, had become mouldy and was perfectly rotten. I forgot to mention that I found it quite warm and pleasant in the cellar, on every examination made, the temperature being probably 43° F.

What will those who think bees may not be kept confined more than six or seven weeks, say to this? more especially when informed that those bees were not supplied with a particle of water during all this time; and that some of the colonies had about six inches square of brood when brought out. They commenced carrying in pollen on the 16th of April; and on the 17th of May, when I visited them in company with Mr. J. Crowfoot, of Hartford, Wis., we found most of the hives filled with bees, brood, bee-bread, and honey. On the 25th, two large natural swarms came out, with every prospect that many more would follow in a few days; and actually twelve hives swarmed on the forenoon of the 5th of June.

Jefferson, Wis.

ADAM GRIMM.

[For the American Bee Journal.]

Wax Scales found in Winter.

I have heretofore supposed that wax scales were formed in the wax pockets of bees, only in warm weather, and then, only when the bees were about to build comb; and have always regarded its production as entirely within the control of the bees themselves, and subject to their will as much as comb-building is. That is, I thought that when they wanted wax for comb-building, they were obliged (impelled by instinct) to eat more abundantly than usual, and to hang clustered for some time, for the purpose of generating unusual heat; and that, by this means, and in this manner only, could wax be produced. I believe this idea is the one usually advanced by writers on bee-culture. But I have recently noticed some facts that seem to run counter to this doctrine.

On the 17th of February, I found in one of my hives a dead bee that seemed rather larger than usual. Careful examination showed scales of wax in its wax pockets. Two others, of five examined, also showed wax scales. The remaining two showed no wax.

The hive first mentioned was full of combs, with a good supply of bees, some brood in two combs, but rather deficient in stores. This colony and a dozen others were fed last fall with syrup made of fifty pounds of sugar, forty pints or pounds of water, and one pound of glycerine added in accordance with your suggestion, Mr. Editor, to prevent crystallization—(a good idea).

To prove to you that I was not mistaken about the wax scales, I removed a dozen or so with a needle, and melted them together on a piece of white paper, which I send for your inspection.*

Here certainly is a case where wax was produced at a time of the year (February 17), and under circumstances (a full hive), that would render it impossible to make use of it in comb-

* Wax, undoubtedly.—Ed.

building. Bees do not use *new* wax for covering brood cells in *old* comb. The cell covers are always of the color of the comb, which leads me to think that the wax for capping brood, and also for building queen cells, is taken from the adjacent comb in all cases.

It cannot be said, in explanation of this, that these three wax-bearing bees may have died last summer, during the comb-building season, for they were found on the top of the covering laid over the frames of the hive, where they must have crawled and died within ten days of the above date, as I removed all dead bees from that place at that time.

My bees are wintering finely in the shallow form of the Langstroth hive, ten inches deep, with all honey-boards removed, and the frames covered with a sort of cotton batting comforter, made precisely like a comforter for a bed. I like these much better than old carpeting or old clothes. I had one made for each hive, costing twenty cents apiece. By lifting one corner of these comforters, I can see the condition of each hive at a glance. The bees are always found clustered up against these warm comforters, and communicate over the tops of the frames, instead of through winter passages. The only swarm lost this winter was in a tight-top box hive, set inside of an empty Langstroth hive.

R. BICKFORD.

Seneca Falls, N. Y., Feb. 20, 1870.

[For the American Bee Journal.]

Maple Sap for Bee Feed.

MR. EDITOR:—As I see many articles in the Journal on feeding bees, I will give you or your readers one for spring feed.

When you set out your hives in the spring, and the weather gets warm enough for the bees to carry in rye meal or pollen, bore some maple trees, and in a proper vessel catch the sap that runs from them. To three quarts of this sap add one pint of honey, and when your bees get to flying briskly, make the mixture lukewarm, pour it in a sugar trough and lay some empty combs or cut straw on it, to keep the bees from drowning. If you have no honey, make a syrup of white coffee sugar as a substitute; but honey is better. This makes a light thin feed; but it answers every purpose for spring feeding, to rear brood.

If, as Mr. Quinby says, it will attract some of your neighbors' bees, remember it is so cheap that you can afford to help them a little, for the great advantage you will derive from it yourself.

You can use the maple sap during the time the trees will yield it, and have some of it boiled down to a molasses. This you can afterwards dilute, and keep up feeding till the fruit blossoms come in. Where you have from forty to sixty stocks, there is little danger of feeding too much; though the bees should not fill up the combs in the brooding apartment, so as to stop breeding. Nor are you likely to feed too much in that way, at this time of the year, as so many cold days occur, on which bees cannot fly out. The more you feed, the more you stimulate the queen, the more she will lay. My bees added more honey

to each colony last spring, with spring feeding, than they did in the time of fruit blossoms. It is the best plan I have tried to promote early breeding or early swarming, and to have plenty of bees when the locust and fruit trees come in.

If you feed inside of the hive, make your feed much stronger, and also feed with warm feed in all cases.

To make passage ways through combs of frame honey, take a half inch bit and bore a hole in the end of a small piece of wood; saw blocks one and a fourth inches long; split pieces off very thin, cut a hole in the comb and insert the wooden block, and the bees will not close the hole. Small tin tubes inserted in the same manner, will also answer the purpose.

A. CHAPMAN.

New Cumberland, West Va.

[For the American Bee Journal.]

Cost of producing Honey.

MR. EDITOR:—I lately saw a statement in the Minnesota papers, copied from the *Onatonna Journal*, stating that J. W. Hosmer, of Janesville, Minnesota, "places the cost of producing honey at four cents per pound. One hive purchased in June last, produced four hundred pounds of honey and six swarms of bees." This is a truly wonderful yield. If J. W. H.'s bees winter well, he will no doubt be able to show the most prolific record of any man living, of success in bee-culture.

My experience in the last ten years has been that, on an average, bees have not produced over twenty-five pounds of honey, per colony, and one good swarm of bees each. In the past three years, great improvements have been made in the cultivation of bees; and the time may come when honey could be produced at twelve cents per pound; but at present twenty cents is as low as man can make it profitable to sell for. Four cents per pound is all gammon! It would not pay for taking out losses which occur yearly.

We should like to hear from different practical bee-keepers on this question, through the Journal; and if any way has been devised to produce honey at four cents per pound, we would delight to see the figures and get hold of the science.

S. B.

Stockton.

The swarming season varies exceedingly in the United States. In Texas, swarms issue early in March, and in the Southern States they are quite common in April. In the Middle States, May and June is the usual period; and it is somewhat later as we proceed further North.

After-swarms usually build the most regular worker combs; and if they lay up sufficient stores for the winter, they generally make the best stock colonies.

If colonies are moved in the line of their flight, and a short distance only at a time, no loss of bees will be incurred.—LANGSTROTH.

THE AMERICAN BEE JOURNAL.

WASHINGTON, APRIL, 1870.

✂ We are requested to state that a new post-office having been established near his residence, Mr. Gallup's address now is "E. GALLUP, Orchard, Mitchell Co., Iowa"—of which his correspondents will please take notice.

The remarks of our correspondent, Novich, give us a fitting opportunity to say again, distinctly, that the AMERICAN BEE JOURNAL is not published in the interest of any patented hive, but exclusively in the interest of bee-culture pure and simple. *This position it will continue to maintain.* While every invention or device pertaining to bee-culture, patented or unpatented, is entitled to be noticed, in our pages, it must be understood that its merits or demerits are matters open for discussion, without fear or favor. In these discussions, however, the subject must ever be kept strictly in view, and all mere personalities avoided.

For feeding bees actually or prospectively in want, use ordinary pure honey or sugar syrup, and feed regularly every evening till they are properly supplied or they can supply themselves from natural sources. But for stimulative feeding, merely to encourage brooding, use honey or sugar syrup very much diluted, giving it in small doses only every other evening. They will thus obtain the water needed for the brood, and have less occasion and less disposition to leave their hives in quest of it, at times when the weather is unfavorable for such excursions.

Beginners in bee-keeping should not, when going into the business, build costly bee-houses, provide high-priced untested patent hives, purchase a large number of colonies, or buy "three-banded," Italian queens at a time when as yet they can hardly tell a drone from a worker. Begin moderately and hasten slowly. The needful experience in practical bee-culture is much more easily and far more efficiently acquired, by careful attention to a few choice stocks, than by a hurried supervision of a large number, even with the aid of manuals and text books. Plain, simple movable frame hives too, will be found better suited for the requisite manipulations, than fanciful and complicated contrivances devised by persons really ignorant themselves of the habits and wants of bees. And colonies placed in an open situation, with their hives readily accessible from all sides and somewhat sheltered or shaded by trees or vines, will be much more conveniently managed than when placed in ordinary sheds or out door bee-houses.

Study first to know what is required for success, and then extend your operations when you are sure that you can have the business "well in hand."

In Prussia, assuming 100 to represent the average annual product of honey, the yield last year, in first class districts was 120½; in second class districts, 100%; and in third class 63.

In first class districts, the season opened May 15, and closed September 16; and in second class districts opened June 8, and closed August 4. Many strong colonies increased six pounds in weight on some of the best days. The increase of colonies by swarming was about 100 per cent. Virgin swarms were common. Fall pasturage was rather scarce. Buckwheat and heather yielded honey in only a few districts.

In East Prussia, standard or magazine hives are most generally in use, though some Dzierzon hives have been introduced. In West Prussia, straw hives are still most common, improved hives being found in few apiaries. In Lithuania straw hives largely predominate; and in Marsowa (part of Prussian Poland) log hives or "gums" are almost exclusively used.

The "foulbrood question" received rather singular treatment at the late German Bee-keepers' Convention. It had been announced as among the prominent topics for discussion, the debate to be opened by Mr. Lambrecht, as customary in such cases, and in accordance with the proceedings of the previous Conventions. But when Mr. L. commenced speaking he was interrupted and literally "coughed down" by a seemingly preconcerted opposition, and the subject was then gently shelved with some cursory remarks from various parties. At this distance, it strikes us that Mr. Lambrecht was not fairly treated. We say this without regard to the theory he advocates. According to the published programme he had a right to expect a hearing, and should have been allowed at least as much time as is ordinarily conceded to speakers on other topics, unless his remarks were entirely irrelevant, and then it would have been the province of the President to interpose. Nor does it mend matters to say that Mr. L. is prompted by mercenary motives, when the Convention just a year before awarded to Mr. Köhler a large pecuniary gratuity for disclosing that which was not strictly speaking new, or his own discovery. If Mr. L. has really devised a mode of curing malignant foulbrood, without destroying bees, combs or hive, it is one of infinitely more value and importance in bee-culture, than the Köhler process can ever be; and the Convention might very properly have devoted an entire day to a candid investigation of it. It was not at all necessary for Mr. Lambrecht to disclose his remedy. All that was proper was to request him to submit it to the most rigid test, and

to appoint a committee to make that test. If he had refused to submit to this, or submitting failed, the case would have been bravely altered, without impairing the dignity of the Convention. As the matter stands, it is left at least in doubt. Prominent members of the Convention—themselves excellent and eminent apiarists, reject Mr. L.'s pretensions; while the Rev. Mr. Kleine, Mr. Gravenhorst, and others equally eminent as the former, speak confidently of the process as an efficient remedy. Time will show who is right. The proceedings referred to have at least given greater prominence to the subject; the disease will be more diligently studied by scientific men; and sooner or later probably we shall have a remedy—whether it be that devised by Mr. Lambrecht, or one proposed by some other successful investigator.

Cheaper than Cheap!

Honey at four cents a pound incredible? We fear that our esteemed correspondent—the more commendable for his singular brevity—is yet greatly “behind the times,” and far from being fully posted in the matter of the *prospective* production of honey. Why, sir, the new inventions and improvements in bee-culture, like the discovery of gold in California, are destined to unsettle the markets of the world! Does he not know, too, that mankind are no longer jogging along in old-fashioned snailpace style, but tripping it on “fantastic toe,” with the speed of light? Has he not yet learned that, in these days of rapid locomotion, even seven-league boots are *slow*; while telegraphic despatches shoot ahead of the passing hour,

“And panting Time toils after them in vain?”

Why, at the present rate of progress, and in view of the astounding advances in bee-culture, with which the “impending crisis” threatens to overwhelm us, honey, that “sweetest of all sweets” (so universally coveted and so unanimously admired), will doubtless quickly become a drug in the market, when, like a ride in a New York ferry-boat, you will be solicited by importunate runners, to *take it*!—There, now, for instance, confronting us complacently, is that admirable, multilocular, protoplasmic protean Hive, which can be indefinitely expanded and enlarged like an India rubber balloon, or subdivided infinitesimally like a polypus! Will not this original and most ingenious device, just brought down bodily from Shakespeare’s “highest heaven of invention,” foster increase of stock *ad infinitum*, and accommodate with comfortable quarters, hosts of busy workers, though far more multitudinous in number than the grand army of Xerxes? And will not these hosts garner up and convert into “surplus” every particle of saccharine found in the vegetable kingdom from “Greenland’s icy mountains to India’s coral strand,” or along the entire terraqueous circumference of the ire-girdled earth?

Then, too, there is that newly conceived most

delectable theory of COMB PRODUCTION, whereby those admirably constructed cellular repositories of honey, which have been the admiration of sages and the puzzle of scientists in all ages, and which hitherto exacted the patient and persevering labor of toiling multitudes; have become a thing of pure organic development! Why, in these latter days, ’tis found that honey combs *grow*, actually grow, and not by slow accretion either, but with the rapidity of Jonah’s gourd, to the voluminous amplitude of a nocturnal mushroom! How many hundreds, aye thousands, of the capacious protean hives aforesaid can thus be thoroughly furnished, on the spur of the moment, with the requisite outfit, while the “singing masons” are relieved from the time honored duty of building “roofs of gold!” Just think of many-celled honey-combs continually springing forth and sprouting out, *en masse* and in order due, like rank cabbages and cauliflowers, and visibly swelling into progressive enlargement and distension under the very eyes of the fascinated and delighted novice, till the “cubic contents” of the novel structure are thoroughly surcharged with superabounding “surplus!”

Then, again, look at those wonderful new BEES—the *Apis miraculosa mehringii*—just imported from that famed part of modern Germany, yeilded “Schlaraffenland,” bordering on the ancient Utopia! Are they not surpassingly beautiful, astonishingly prolific, indefatigably industrious, inconceivably productive, and most delightfully gentle? Ah, this new race—the *ne plus ultra* of honey gatherers, is just what was needed to cap the climax, after the invention of the protoplasmic protean hive, and the discovery of the spontaneously growing honey-combs. For, lo, these admirable creatures convert the old tripartite colony into one single animated homogeneous machine, of every joint compact and working together harmoniously with every limb. No longer shall we see separate instincts, diverse impulses, and conflicting interests, interfering with each other in our hives. No, by these new bees the colony is at once transformed into one sole body corporate—like the defunct French republic, “one and inseparable”—coadunited on the “one horse” system of internal economy and external co-operation, which must infallibly produce results in bee-culture such as were never dreamed of in the rhapsodies of Homer, the theogony of Hesiod, the mythology of Ovid, or the philosophy of Virgil! Will not the land literally flow with honey, when this new miraculous insect, these unrivalled protoplasmic hives, and those spontaneously growing honey-combs, are generally introduced, universally used, and come to be superabundantly plentiful, in these United States? And, oh, the price of honey, when all this comes about! How will the merchant manage to give us “quotations,” when values drop down below nihility itself?

What marvellous acquisitions are these! Hives of gum elastic extensibility and of divisibility infinitesimal; Combs of growth spontaneous, extraneous, in-

stantaneous, voluminous, and interminable; and BEES before unheard of, now unexampled, unexcelled, unapproached, and inappreciable! Is there not "a good time coming" in ancient, wide diffused and world-renowned bee-culture? And will not the "apiarian of the future" have a jolly time, and be counted among the magicians and thaumaturgists of that "new era?" By all means, let us have "AN ILLUSTRATION" of these new marvels, worthy of the genius of a Cruikshank or a Crowquill; and give us plenty of pots, jars, demijohns, barrels, pipes, hogs-heads, tubs, tuns, and tanks, for the honey that shall flow—

"—in omne volubilis annu!"

Correspondence of the Bee Journal.

BLAKELY, ALABAMA, January 28.—Our peach trees are all in bloom. The thermometer has stood at 65° for the last ten days, during the day. Pollen in profusion. Stocks all full of brood. I greatly doubt if this precocity in the season bodes good. I fear a cold time, with frosts, will cut off supplies that would have been of more service later. It is a singular fact that bees here commence breeding later than at the north. It is said they begin there in January, here it is usually in February. But when they do begin here, they do so in good earnest, generally filling all the empty combs very rapidly.—J. M. WORDEN.

LITTLETON, N. H., February 6.—How any one who keeps bees can do without the BEE JOURNAL, is more than I can tell. I am acquainted with a bee-keeper who lost sixteen good stocks last winter. Last December I bought five swarms of him, and then I found out the trouble. His hives were made as tight as he could make them by cramming in paper into every entrance, without any upward ventilation whatever. The bottoms and half way up the sides of the hives as wet as they could be soaked. Two dollars for the Journal would have saved him one hundred dollars, at the lowest estimate. Is not that penny wise and pound foolish? That bee feed mentioned in the January number, by John Winfield, was just in season for me. I have a swarm of Italians in the cellar that had not one pound of honey when carried in. I had some honey and fed them with that till I read how to make the feed. I now use that. The bees like it and are doing well; some die, but I am in hopes to get them through. With many wishes for your prosperity and the success of the BEE JOURNAL and all its readers, I am respectfully yours, MRS. LAURA PAGE.

NEW CUMBERLAND, W. VA., February 10.—The summer of 1868, reduced the number of my colonies greatly, on account of the hot weather and dry season. In the spring of 1869, I transferred twenty-five colonies from common to frame hives, none of them having more than a quart of bees. The other portion of my colonies was in better condition.

I have now fifty-six colonies, all Italians of the nicest kind. If any bee-men come within reach of me, let them call and see how much they are ahead in the bee business.

I received from Mr. R. Wilkin, of Cadiz, Ohio, a queen bee, just imported, which I think is hard to beat.—The remainder of my colonies are from Rev. L. L. Langstroth's stock. I renewed nearly all my queens last summer, from my imported queen.—A. CHAPMAN.

WILTON JUNCTION, IOWA, February 12.—I have twelve stands of bees in the cellar under my house, all doing well. The cellar is not a very dry one, yet the bees did very well in it last winter. I fed them in February and March, and they thrived well last summer.—JOHN SPENCE.

FREDONIA, N. Y., February 13.—Although bee-keeping during the last season was rather an uphill business, we hope by a continuous *Galluping*, we may come out right in the end—so keep the BEE JOURNAL coming.—L. SAGE.

WILMINGTON, VT., February 13.—I am a new beginner in bee-keeping, and cannot get along without the BEE JOURNAL. Last season was said to be the poorest known in this section for twenty years.—J. H. KIDDER.

OLD MISSION, IOWA, February 13.—Bees did well here last season, according to the weather, which was cold during the early part of summer. They bred drones in June, and again in September, though those in large hives swarmed hardly any; but from such as were in small hives, not over 2,000 cubic inches, we got plenty of swarms.

There is a kind of spider on many of the flowers here that catches the bees by the neck, in which way many are lost. There is also a kind of long-legged wasp or hornet, that builds its nest of clay under the roofs of barns and out-houses, which catches these spiders and carries them home to its young.

Last summer there were many birds here that would sit on the fences, watching, and then dart down and snap up bees alighting on the clover blossoms. Their color is dark gray, with a little yellow spot above its bill; the under part of the body was white.—F. SCHLICHTER.

PERRYVILLE, OHIO, February 12.—My bees are now carrying in rye flour that I set out for them. My hives are very strong, and as full of honey as I ever had them at this season of the year.—M. A. GLADDEN.

UPPERVILLE, VA., February 14.—The weather has been too warm here for my bees in the cellar, and I have moved them out, as I could not keep them quiet.—H. W. WHITE.

EAST LIVERPOOL, OHIO, February 18.—Bees have done well here the past season. Though they did not swarm as much as in some previous seasons, they stored a good amount of surplus honey. I have the principal part of my surplus honey stored in glass boxes. It sells to better advantage in them than in wooden ones. Honey sold here the past summer at thirty-five cents per pound. The BEE JOURNAL is a welcome monthly visitor. I hope it is prospering.—A. J. FISHER.

MOUNT LEBANON, N. Y., February 22.—I am now in my eighty-eighth year, and have been in the bee business ever since I was old enough to carry an empty hive. I thought I knew all about bees, but since your Journal came to hand, I have found I was but a novice in the business, as I have learned more by the Journal the last four years than I had in the whole of my life before. Any new beginner in the business had better pay four dollars for the Journal than not have it.—D. J. HAWKINS.

FARIBAULT, MINN., February 20.—Your much appreciated Journal continues to enliven us through the dull monotony of our long winters up here in Minnesota. I have been in the bee business for about four years, and like it very well. Still though I cannot give them the proper care, I have had very good luck; but have never been able to realize the amount of profit that many claim for their bees. I

lost thirty-seven swarms in wintering last season. Perhaps that bee disease was the cause of my loss. I am wintering forty stocks this winter. So far they are doing well. I am using the Langstroth hive, the Harbison hive, and the Langstroth modified, and like the latter best. I winter my bees in my cellar and bee house. I have mostly let my bees swarm naturally, and have lost only two swarms by flight in four years. I have been troubled with the moth considerably. I have black bees with a few hybrids. I think I shall try the Italians this coming season. I was born in the State of New York, lived in Ohio about twenty years; have been in this State about sixteen years; and am about forty-five years old. I am bound to make bee-keeping pay. My wife is a No. 1 apiarian and bee-tender. Although an invalid, she devotes the greater part of her time to the care and study of our bees. Very little escapes her attentive and observant mind and eye. Enclosed find two dollars for my subscription for the Journal.—N. TRAVIS.

EDGEFIELD JUNCTION, TENN., February 21.—My bees took rye meal January 19. I had young bees flying a week ago; and pollen from bloom two weeks since. I am experimenting to obtain early drones; have wintered a few in a queenless colony. I sold one queen in January and sent one full stock to Mobile, Alabama, in perfect safety, the queen laying eggs while on her transit—there being only six dead bees found, and four of those were said to have died of old age. I have ten reserve queens in small colonies, in fine condition.—T. B. HAMLIN.

NATCHEZ, MISS., February 13.—Our winter here, thus far has been a very mild one. Temperature to day 72°, with wind from the south. For several days past the weather has been mild, and the bees have been flying out freely, returning laden with pollen. They usually commence breeding at this time, and it is kept up until the swarming period, during the second week of April. Our plum trees stowed their first blossoms on the 30th of January, and are now almost in full bloom. The peach trees are also beginning to blossom freely, as are also some of the forest trees and many flowers. Our winter, however, is not yet over, as we usually have some frosts and severe weather until about the middle of March. My forty hives are in fine condition. In this climate the open air is best for wintering all stocks. I succeeded in bringing through the severest of our winter weather, in the open air, but under shelter, about a pint of black bees and a queen, in an observing hive, containing a single "American" frame, with two glass sides, and no other protection than a lining of cloth between the glass and the shutters. They had dwindled down very much until the 26th of January, when, having fed them with honey, it being a mild day, the hybrids of some hives in the yard made an attack on them and carried off their stores. The night following being frosty, they were discovered in the morning dead, and without a particle of honey in the comb. Had they not been deprived of their feed, I do not doubt they would have come through safely, though I cannot believe the queen would have remained fertile.

Our climate here is a changeable one. To illustrate, on the 16th of January, thermometer 74°, 17th 54°, 19th 46°, 20th 43°, 21st 58°, in the morning, and 68° at noon; and so it usually varies—at least after the first of January, until spring fairly sets in, about the middle of March.

I have observed that when their temperature is 46° F. a few bees will venture out; at 50° they will fly more numerous; while at 60° they fly briskly if pollen is to be had.

Your valuable Journal reaches me regularly, and I

always peruse its pages with much interest.—J. R. BLEDSON.

KOSHKONONG, WIS., February 25.—I am trying the experiment of wintering my bees in a dark cellar. I carried them in at the commencement of cold weather. On the 16th of November raised one side of the caps on blocks, and kept the temperature at about 35° F. After a short trial I thought best to remove the caps entirely from the hives. After a further trial, I reduced the temperature of the cellar to from 28° to 30°, in which condition the bees became sufficiently quiet, and so remained till the weather moderated in February, when they became somewhat noisy. The 7th proved to be a very fine day, and towards noon the thermometer stood at between 50° and 60°. I carried out my bees, placed them on their summer stands, and removed the caps, and as a consequence the bees took a general fly, and very few were lost.

I have since kept them quietly in the cellar, with two inches of newspaper spread over the frames, but drawn a little to one side, so as to be sure to give ventilation. Temperature still at from 28° to 30°.

I like the plan of throwing some sort of wire arrangement over the frames, to keep the bees in and the mice out; and I find no difficulty in making room under the wire for dishes containing feed or water. I find these dishes of water to get empty every few days, and as I cannot ascribe the disappearance of the water to leakage, and am not willing to ascribe the whole of it to evaporation, I am forced to the conclusion that the bees consume most of it.

Of course I cannot tell as yet how I shall succeed with bees, but I act on the principle of the ancient motto—*"Perseverantia vincit omnia."*—D. P. LANE.

ORCHARD, IOWA, March 8.—The readers of the AMERICAN BEE JOURNAL will be pleased to learn that within eighteen miles of Nashville, Tennessee, bees commenced carrying in meal on the 19th of January, and on the 18th of February, the silverleafed poplar, the willow, the elm, the maple, and several other trees were in bloom, and a few more days would bring out the peach and plum blossoms. But away down in Alabama, bees were swarming in January, according to one correspondent. You will see this beats our time altogether. Yet in ordinary seasons, we get as much honey, per swarm, as they do there—that is, as near as I am able to make out.—E. GALLUP.

SHREVE, OHIO, March 11.—I suppose you have never heard anything on bee-culture from this part of the country. I started in the business four years ago, with the Italian bee and movable frame hive, among a set of old rustic bee-keepers, who claimed it was all a humbug; that the Italian bee was no better than the black; and that the movable frame was just a worthless patent right, to make money of. For my part, I intended to test the matter, and procured a swarm of pure Italians from Mr. A. Gray, of Riley, Ohio. They have done finely, and I have proved to the people here, that it is a profitable business. I succeeded in getting my neighbors, within two miles, to change their bees; so that I do not expect to be troubled with black drones, next season, in getting my queens mated. I have fifty stocks all in good condition, and am making one hundred and fifty movable frame hives this winter. I intend to put my whole time into the business. Last season here was just a medium year for honey. It was not as good as we have had; yet I hope the next will be better. I will send you a photograph of my apiary this summer. I enclose two dollars for my subscription to the Journal. I like it very much. So, hurrah for the AMERICAN BEE JOURNAL and the Italian bee.—G. W. STINEBRING.

MONMOUTH, ILLS., March 9.—Friend Adair takes some of us to task for not reporting the fractional pounds of honey. If he was out here, I could show him a string almost a yard long, on the wall of the kitchen, where I marked the weight of each box. Few boxes weighed exact pounds; most of them contain fractions. Some day when I get leisure, I will copy it and send it to him. Mine really averaged $110\frac{1}{4}$ pounds, instead of 110, as reported; and had I included three frames taken out of main hive and empty frames put in their place and which were filled, the average would have been larger. Last year, in this section, was the best honey season I ever saw or expect to see soon again. The season was wet throughout, from June to October.—T. G. MCGAW.

[For the American Bee Journal.]

Dwarfed Queens.

I do not believe that a dwarf queen is *always* the result of being reared in a small cell, from the fact that they do not always correspond in size, to the cell they hatch from. Having watched hundreds with this very point in view, I am compelled to admit that I cannot always predict the size the queen is to be, by the size of the cell she is reared in. I have known a queen cell of the smallest size, so small that it might have been mistaken for a worker cell, had it not been connected with others that were made as usual, to produce a large size queen. On the other hand, I have known a queen hatched from a cell of the largest size, to be even smaller than a worker. These facts show that we must look for other causes for diminutive size, in some instances at least.

I will admit that a cell is sometimes too small for the bee that is raised in it, like the drone in the worker cell. But it is not often that a queen or a worker is thus affected. A full sized worker is reared in a cell nearly half filled with cocoons left by previous occupants. The idea that a bee never increases in size, after leaving the cell, will have to be abandoned.

Whenever the bees find it necessary to rear queens from material deposited in worker cells, the small size of such cell is thought to have effect on the size of the queen. Notwithstanding the egg may be laid in a worker cell, too small for a queen, it does not follow that she must be developed there. When the bees wish to rear a queen thus, they immediately enlarge the outer end, and if the comb is new, first bite away and reduce the length, and fill the original cell with chyme, crowding the larva queen into the enlarged part, where she literally floats.

It cannot be made to appear that any lack of food can make the difference. I have the authority of the BEE JOURNAL for saying that "up to the sixth day after emerging from the egg, all larvae, whether workers, or drones, or those designed for queens, receive precisely the same kind and quality of food, namely *chyme*, as prepared by partial digestion in the stomachs of the nursing workers. To the queen larva, however, this is administered in larger quantity—so plentifully, indeed, and apparently so greatly in excess of its immediate needs, that the nascent insect literally swims in it." If natural and artificially bred queens—I object to the word *artificial* here—are

fed precisely alike, "up to the sixth day," it can be shown that there is an excess in quantity, by what is left in the cell after the queen has matured. We must look still further. When bees are deprived of their queen, and they can choose larvae to rear from, it would seem reasonable that they would take such as could be matured at the earliest possible moment. The uniformity with which they mature a queen in just a few hours short of ten days, in hundreds of instances, would look as if that was the shortest time possible. I never yet had any mature in less time. I think there must be some mistake about their hatching in seven or eight days.

And now, if the food is the same in all cases, and there is no want of room to cramp the chrysalis, what is it that makes the difference? Or is there no difference? I do not care to take the position that artificial queens are *usually* smaller than others. One reason why it is thought to be so, I think will be found in the fact we see very many more of such, than of the naturally reared ones, and forget to compare the proportion. Notwithstanding the cells are *generally* larger in a swarming hive, some small sized queens will be hatched then.

Can we not have some other solution of why we have any small ones? M. QUINBY.
St. Johnsville, N. Y.

[For the American Bee Journal.]

Selecting Stock.

I receive a great many inquiries of this character—"I have purchased two, five, or more swarms" (as the case may be), "of a neighbor, in box or gum hives, and I can have my choice out of the lot" (which is more or less in number); "please inform me how to make the selection so that I get good swarms."—In answer to these inquiries, I will give you an actual transaction, without mentioning names.

"Come, Gallup, jump into my sled and ride up to Mrs. R.'s, and help me select a couple of swarms of bees." In this case, the woman owned the bees, as the man could have no luck. I selected two swarms; but my friend thought I had not made a good selection. So I persuaded him to take one of my selection, and one of his own. I selected one that had the comb all built in regular order and nearly all worker comb, well crowded with bees, with honey enough and not too much, and had cast a swarm the previous season, for in that case they had a young prolific queen. My friend selected a very heavy hive, with but a medium swarm of bees. Only a small proportion of the comb was worker comb, and all was very irregularly built. This was in the latter part of February, and in box-hive times. I explained that my selection would send out three swarms to his selection sending out one; and that he was now purchasing for the bees and not for the honey. The result was, my selection sent out four swarms early next spring, and all did well, filling their hives; while his selection sent out a small swarm late in the season, which did not fill its hive, and died over winter. The fact is, it had only an old unprolific queen.

So much for selecting swarms. Now for trans-

ferring. Select such stocks as have good straight comb, and bees enough. Transfer them early in the spring, and save honey for your own use, or for feeding other swarms. But select good straight combs for transferring, and a large proportion should be worker combs; and if the bees are numerous, you have in nearly every case got a prolific queen, without asking whether they cast a swarm the previous season. People that have or keep bees in old box-hives for sale, as a general rule do not read the BEE JOURNAL, so they will not be apt to know the difference between a good stock swarm and a bad one. Now about the price. The seller will generally make no distinction; all are alike to him. But I have seen swarms sold in the fall for ten dollars, that were scarcely worth taking as a gift; and I have seen swarms sold at five dollars that were better worth twenty dollars than others would be as a gift. Understand, that at the present day all swarms can be made extra ones, if taken in season. With the movable comb-hive, if the queen is not good, we can supply another; and if they lack honey, they can be supplied with that also. In fact, everything, except the season, is under our control. Some will be apt to tell you that if you have a poor swarm, it must remain a poor one; but you must not believe any such nonsense.

E. GALLUP.

Orchard, Iowa.

[For the American Bee Journal.]

Raising Early Queens.

MR. EDITOR:—About those patented boxes and processes for rearing and fertilizing young Italian queens, I have nothing to say. But I do say that I can raise queens for one dollar apiece, if taken as soon as fertile.

In raising young queens, I agree with others as to the starting and building of queen cells. I would use no brood or larvæ older than one day; but the trouble comes after they are hatched; especially, if raised early—and that is the time of which I speak or write.

After experimenting for years, I found that the main loss was from regicidal attacks—(see Mr. Woodbury's views in AMERICAN BEE JOURNAL, Vol. 2, page 157); and that these attacks were owing to a scarcity of honey in the fields. Consequently the guards are on hand in full force, and will seize the returning queen, if she has been scented with drones from other hives than her own, and she will often be killed or crippled.

Huber thought there were two or more classes among workers, and that their occupations remained the same always. Other and later writers maintain that it is chiefly owing to their age, and that this makes the difference in their occupations. My own observations lead me to concur in this latter opinion, and to believe that I could apply this knowledge to queen raising, and thereby help me out of the difficulties I experienced, or some of them.

I think there are three classes of workers in the hive. First, infants under ten days old. These will be well received by any colony to which they are given. The second class are those from

the tenth to the twentieth days of their lives; and these are the real sovereigns of the hive. These are the chaps that kill my young queens, if honey is scarce and they are busy with other cares. The workers over twenty days old are producers, and are not apt to enclose a young queen on her return from her wedding tour. I therefore use bees over three weeks old in my nucleus hives, and can get perhaps a dozen queens fertilized in each hive prepared in this way: Move a strong stock two or three rods away; place your nucleus on its stand; give this nucleus a very small piece of brood comb with queen cell attached that will hatch in two or three days, and also combs with honey in them. After the queen is hatched, I take away this brood comb. If I wish to have more than one fertilized, the extra ones must be caged in the hive until the reigning one is removed, and for some hours after.

I commenced bee-keeping in 1847, being then twenty-five years old. At present, I make it a rule to winter fifty stocks. I am a farmer, and was born in the State of New York.

JOHN L. DAVIS.

Delli, Mich., Feb. 22, 1870.

[For the American Bee Journal.]

Ventilating Button for Caps of Hives.

I think experience teaches that the caps of hives should be sufficiently ventilated to relieve them from a confined and melting heat, when the bees are storing honey in them in hot weather, and to carry off all dampness in cold weather; while at some other times, little or no ventilation is needed. It is necessary, therefore, to have some method by which ventilation can be easily regulated. In the absence of a better plan, the following will be simple and effectual.

For ventilators bore four holes of one inch, each, in diameter in the sides of the cap; cover these holes or ventilators on the inner side with wire-cloth; and on the outside put on the ventilating button, made as follows: Take a strip of board, three inches long, one inch and a half wide, and five-sixteenths of an inch thick; make the ends oval, and cut away half the thickness of the strip or button clear across its width, and to the length of one inch and a quarter. In the centre of the button bore a hole to receive a light one inch screw, to hold it in place and around which it revolves. To mount it, turn the halved side of the button towards the cap, and lay it horizontally and centrally below the ventilator, so that the upper edge of the former will come flush with the lower edge of the latter; drive in your screw, which should be very firm in the cap and somewhat loose in the button. Now turn up the halved end of the button over the ventilator, which will then be somewhat darkened, yet admit air freely, and be measurably protected against driving storms. With the other end of the button the air can be entirely shut off or regulated at will.

I have for many years used the device above described on some of my hives, with entire satisfaction.

HENRY CRIST.

Lake P. O., Ohio.

